Ar n's New eBook Reviewed
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Next-Gen Core 2 Chipsets Tested
Reviewed: Intel's X48 and Nvidia's 780i!

MAXIMUM PC

MINIMUM BS • MARCH 2008

51 Hardcore, Extreme, Explosive, Dynamic, Righteous, Inspirational, Sweet-Ass WINDOWS TIPS

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✔ Customize Your Control Panel! ✔ Supercharge Your Clipboard! ✔ Uninstall Hidden Components! ✔ Speed Up Your Start Menu! ✔ Customize Your Boot S

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GAMING AWARDS: From worst to first, our top picks of 2007!

Ed Word

Profile of an Adolescent OS

Please send feedback and green beer to ***will@maximumpc.com.***

Let's face it, 2007 was a crap year for operating systems. Vista pretty much stinks, and even the almighty Apple has had big problems with Leopard. But I think I've figured out what's causing the issues plaguing Windows and OS X: They've finally reached puberty. As near as I can figure, operating systems mature at a slower rate than humans, so after a process that took some 20 years, things are starting to get awkward for these pimply-faced piles of code.

The early days of Windows were an analog to the formative years of a human infant. Windows 3.1 had a new fresh face that always kept us entertained ("A file manager! Amazing!") and was even good for a few useful tasks. But 3.1 also needed constant maintenance to keep working—in much the same way a baby can't care for himself.

The consumer PC reached early childhood with Windows 95. Like a rambunctious 4-year-old, Win95 could get around and communicate, but you had to keep it away from things that could badly hurt it (to Win95, the Internet is the equivalent of a fork dangling from an electrical socket). Like a 4-year-old, Windows 95 could almost take care of basic maintenance by itself but still needed supervision to avoid "accidents." And like a child just learning the nuances of the language, you could hold a real conversation with Win95—just as long as you kept things simple.

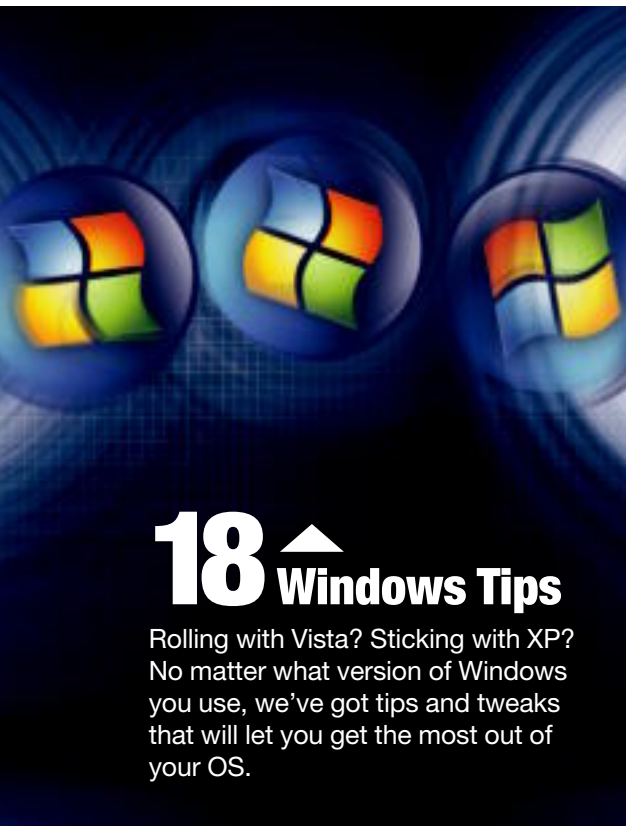
Windows 98 represented late childhood. With support for modern hardware, it was vastly more capable than Win95, but it still required hand-holding to cross the street safely. And, like a rowdy 8-year-old, everything in Win98 was better after a midafternoon nap.

And then came Windows XP, the respectful 12-year-old who works at his dad's office. Unlike the hormonal know-it-all teenager that would be Windows Vista, you could treat WinXP like a full-blown adult. Hell, WinXP did everything we needed—quickly and effectively without any lip. Unfortunately, however, its status as a quasi-adult eventually caused WinXP problems. It was smart, but not wise and experienced. Like a 12-year-old, the OS will hop in damn near anyone's proverbial van, despite constant warnings to be wary.

And now we come to Vista, the gawky 14-year-old. It knows what it wants to be and what it wants to do, but somehow it just can't get everything working well enough to make it happen.

What will Windows 7 bring in 2012? Will it be a meth'd-out, convenience-store-robbing 18-year-old? Or will it be a cool 22-year-old go-getter, just starting his first real job and looking to take on the world? Only time will tell, but I'm hoping that Win7 ships with a plan to solve world hunger—and not a switchblade.

Features



18 Windows Tips

Rolling with Vista? Sticking with XP? No matter what version of Windows you use, we've got tips and tweaks that will let you get the most out of your OS.

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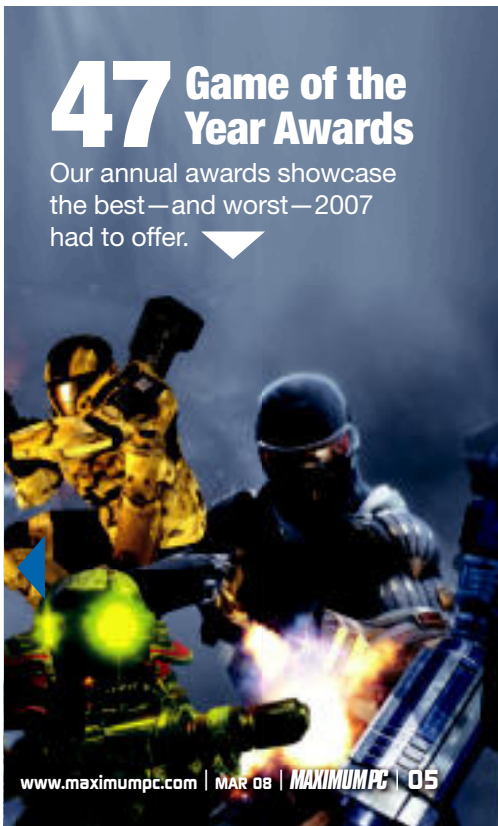
We show you how to take your videocard to the edge!



47 Game of the Year Awards

Our annual awards showcase the best—and worst—2007 had to offer.

MAXIMUM PC

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700MHz Auction Underway

Spectrum may provide consumers with a new broadband option

As this issue hits newsstands, companies will begin bidding on a section of the 700MHz spectrum that had previously been used by analog TV. This auction, however, has engendered much more media interest than past FCC auctions, in part because of the spectrum's features but also because of the companies participating in the sale.

THE SPECTRUM

The section of the 700MHz spectrum the FCC is auctioning off is composed of five different blocks. Of these, the A, B, and E blocks are further divided into smaller regional areas. These sections of the spectrum are of most interest to regional carriers hoping to fill out their networks. Unlike the other blocks, the D block is being sold as a single, nationwide license; however, there is one caveat: The spectrum must be given up to public safety officials in times of emergency. Allen Nogee, a principal analyst at In-Stat, explains that "this makes the license most attractive to a big operator that can use other spectrum if the D block has to be given up."

The most attention, though, has been paid to the C block, which is divided into 12 regions. The C block is valuable because it has much stronger penetration than traditional cell signals and because of the FCC's acceptance of open access rules that Google fought for, assuring that the spectrum will be open to essentially any type of device from any manufacturer.

THE PLAYERS

Nogee believes only a handful of the 100-plus bidders are serious competitors for the C block. Of them, Verizon, Google, and AT&T are at the top of the heap, with Verizon having the best chance of winning. The company's new policy of *glasnost*, after a long period of Soviet-style suppression of its network—going so far as to strip features from handheld devices—suggests a serious change in its business model. Verizon appears to be moving toward building market share by opening its network to an array of devices.

While Google will take part in the auction, it may have already gotten exactly what it wants. The company generates revenue primarily through advertising, and whether it wants to spend the money to build up a wireless network is unclear. Nogee thinks Google would be hard-pressed to create a national voice or data network and believes the company is not particularly interested in being in the service business. Instead, it would be happy to get as many devices as possible on the spectrum to drive adoption of the company's search engine and online apps.

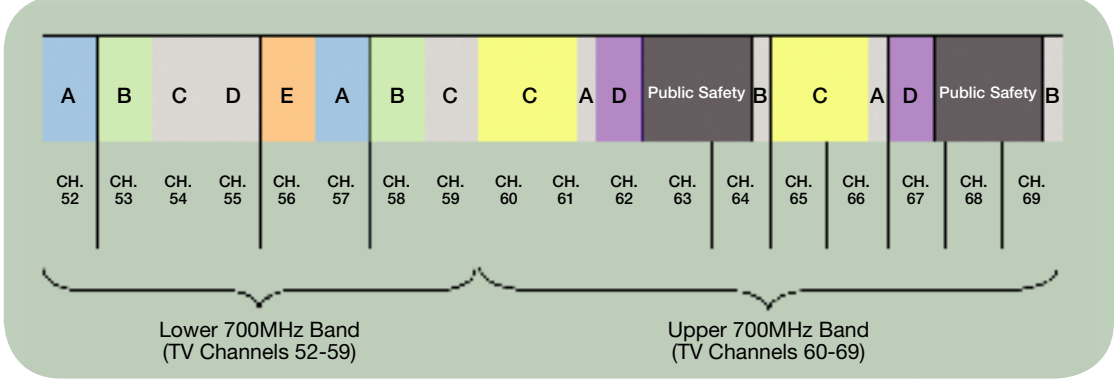
AT&T recently purchased spectrum in the 700MHz band from Aloha partners for $2.5 billion, so instead of competing for the C block, the wireless giant may fill out its network by purchasing smaller, regional licenses. Nogee also thinks AT&T might be interested in the D block; since the company already owns some of the 700MHz spectrum, it can give up the D block in times of emergency and continue to operate.

THE OUTCOME

Regardless of who wins the C block auction, it will be some time before consumers benefit from any change. Building the necessary infrastructure will take several years, and hardware manufacturers will have to design devices that can operate on the network. The winning bidder, however, must provide coverage to at least 40 percent of the population within four years, and at least 75 percent of the population within 10 years.

The biggest benefit will be the potential for nationwide wireless broadband, giving customers an option other than DSL or cable. Also, since the spectrum will be opening up internationally over time, there is the possibility the C block could provide worldwide coverage.

REVISED 700MHZ BAND PLAN FOR COMMERCIAL SERVICES



The blocks shaded above in light gray (Lower 700 MHz Band C and D Blocks and Upper 700 MHz Band A and B Blocks) were auctioned prior to Auction 73.

The 700MHz spectrum being auctioned off has been divided into five different blocks. The 12 sections of the C block are expected to receive the highest bids.

A Terabyte for Laptops!

Hitachi and Asus partner up to set a new storage standard

Like that tiny rabbit in a dog race, Hitachi is making its mark as a sprinter in the great computer storage competition. It was the first company to hit the market with a terabyte drive, and thanks to a partnership with Asus, the company can now add the world's first terabyte laptop to its list of accomplishments.

Dubbed the M70, Asus's notebook will use two of Hitachi's new Travelstar 5K500 2.5-inch hard drives in a RAID 0 configuration to hit the terabyte mark. The drives themselves feature Hitachi's new Rotational Vibration Safeguard technology to counteract the threat to data caused by too much rocking on the ol' laptop speakers.

Preview

Dell Crystal Display

New 22-inch LCD looks intriguing, but is it worth the steep price?

Word of Dell's avant-garde LCD monitor first leaked several months ago. Now, details about the stylish screen have finally surfaced and shipping product is imminent.

The 22-inch, 1680x1050 screen is framed by 4mm-thick (er, thin) tempered glass and sits atop a polished-metal tripod stand. Embedded in the glass frame are four speakers (which can be augmented by a subwoofer via a built-in output), as well as a webcam that's positioned top and center. Connectivity options consist of DVI/HDMI, but surprisingly, no DisplayPort (Dell has been a vocal supporter of this next-gen interface).

It all makes for a splashy package, but we'll reserve judgment until we can actually test the screen—after all, we haven't been impressed with other 22-inch LCDs, which all seem to feature inferior 6-bit-color panels. For $1,200, we'd expect a screen of the highest quality.

TOM
HALFHILL

Teeny-Weeny PCs

For years I've envied the tiny subnotebook PCs that are popular in Japan but usually unavailable elsewhere. Every traveling Japanese businessman seems to have one of these little critters. They run desktop apps, but they're small enough to toss into a carry-on bag—unlike most other notebooks, whose carrying cases and accessories make them a separate piece of luggage.

Now a Taiwanese company has scored an unexpected hit with an affordable subnotebook computer that was introduced late last year. Despite humble specifications, the Asus Eee PC is selling faster than beer at a NASCAR race. It's about the size and weight of a small book, costs $300 to $400, and has a "solid-state storage drive" (2GB to 4GB of flash memory) instead of a hard disk. The flash drive is preloaded with Linux and desktop apps, including OpenOffice and Mozilla Firefox. A custom GUI hides the Linux command line. In addition, the Eee PC has wireless networking (Wi-Fi 802.11b/g), a memory-card slot, USB ports, Ethernet, a 7-inch LCD, and a cramped but usable QWERTY keyboard.

Ironically, the Eee PC ignores the much-hyped ultra-mobile PC (UMPC) specification. Since 2006, Intel and Microsoft have led a lavish marketing campaign to promote UMPCs, which are tablet computers with touch screens and (usually) a tweaked version of Windows XP or Vista. Although some people like UMPCs, they're much costlier than the Eee PC and aren't generating the same buzz among users.

Frankly, for the money, the Eee PC isn't impressive. Its 800x480-pixel screen makes web browsing clumsy. Its 900MHz Celeron-M processor is underclocked to 630MHz. And because Asus downsized the battery to save weight, the Eee PC runs for only a few hours on a charge—no better than other notebooks. For about the same price, you can buy a conventional notebook with a faster processor, roomier hard drive, more RAM, bigger screen, and better keyboard.

So why is the Eee PC so popular? It's smaller, lighter, and customizable. It inspires tinkering and has spawned online communities of hardware and software modders. Encouraged by the Eee PC's early success, Asus plans to introduce several new models, including some with larger screens and Windows instead of Linux. Asus is clearly onto something here. I expect other companies will soon join the bandwagon with their own teeny-weeny PCs.

Tom Halfhill was formerly a senior editor for Byte magazine and is now an analyst for Microprocessor Report.

GAME THEORY

THOMAS MCDONALD

A Good Year or the Best Year?

Now that we've closed the book on 2007, we can finally say what some of us have been thinking for a while now: Best. Year. Ever.

Across all gaming platforms, we have seen not only a marked increase in sales but an undeniable renaissance in content. There have been single years with more groundbreaking, successful, or "classic" individual titles, but we've never really seen a year when so many of the artists who create our entertainment were firing on all cylinders. These were not radical new designs or bold new advances, but an absolute refinement of the art of game design. Witness: BioShock, Portal, Call of Duty 4, Unreal Tournament 3, Team Fortress 2, Gears of War (PC), Quake Wars, Crysis, World in Conflict, Supreme Commander, Mass Effect, Assassin's Creed, Halo 3, and more.

That's right, I'm including those last three non-PC titles, and for a good reason. They were at the pinnacle of gaming for the year, and they were made by companies with deep PC roots: BioWare, Ubi Montreal, and Bungie.

That's what makes 2007 a bittersweet year for computer gamers. PC stalwarts like BioWare, Infinity Ward, Irrational, Epic, Big Huge Games, and others turned their sights toward the console for the mere promise of riches, fame, and glory—and were amply rewarded for their treachery.

Paradoxically, this is a good thing for PC gamers. We will benefit because while the non-MMO PC market remains vastly smaller than the console market, it's still profitable, and growing. PC game sales are keeping pace with the rest of the industry, which grew more than 25 percent in 2007. (Granted, it's humbling to see the best and boldest, hardware-crunching PC titles of the year, Crysis and UT3, post sales of, 87,000 and 34,000, respectively, in their opening weeks, while COD4 for the Xbox 360 blows through 1.5 million copies in November alone. On the other hand, UbiSoft still sells more games for the PC than for the Wii or PSP.)

PC gamers will feel a kind of trickle-down effect from these shifts, as console games created by developers who have traditionally worked on the PC migrate back to that platform with enhanced content, as Gears of War already has. Let the console sales foot the bill for increasingly expensive game development. PC gamers will still reap the rewards in the end.

Thomas L. McDonald has been covering games for 17 years. He is Editor-at-Large of Games Magazine.

HP iPaq 310 Travel Companion

TESTED & GEEK DISAPPROVED

Adding PDA features, a digital media player, and online trip-planning to a solid GPS with a brilliant 4.3-inch touch-screen display is a great idea, but they're so poorly executed in HP's iPaq 310 Travel Companion that we just can't recommend this device. Sync the iPaq to Outlook, for instance, and it will grab your contact database, but it won't show your appointments on its calendar. Go to http://tinyurl.com/2a3ber to find our full review. $450, www.hp.com

Canada's Copyright Clampdown

Consumers avoid new tax, but other digital-music measures loom

Canada's consumers just narrowly avoided having to pay a new tariff on electronic storage devices such as digital media players and even memory cards. The tax, put forth by the Canadian Private Copying Collective, which represents the music industry, and approved by the country's Copyright Board, was meant to compensate artists whose work *could* be copied using one of these devices. There's precedent for the plan, as rewriteable CDs and cassettes sold in that country are already subject to such a tariff. Fortunately, the Canadian Federal Court of Appeals had the common sense to strike down the new tax (although it remains in place for CD-Rs).

Still being decided are proposed reforms to Canada's Copyright Act. Pushed by the Canadian Recording Industry Association, the legislation, if passed, would impose a fee for downloading and sharing songs on the Internet. And like America's flawed DMCA, there would be no distinction between copying material for personal use or backup and copying for counterfeit purposes.

A Grassy Knol

The Google cash cow has found a new pasture to feed on: Wikipedia

Google plans to combine prestige with pennies in a grand effort to address the core criticisms and immense traffic of Wikipedia, one of the Internet's most visited reference resources. Google's new Knol initiative, named for its underlying "knowledge unit" mechanisms, will serve as an encyclopedic web of pages under the control of the individual authors that create them.

Individual topics will have multiple Knols—Google expects orderly, detailed articles to rise above their lesser peers in the search rankings. But Google's not just appealing to frustrated Wikipedia users' sense of ownership; it's promising to fatten their wallets, too. Knol creators will get the chance to enable Google-based advertising on the pages they create, as long as they agree to share part of the accompanying revenue with Google itself.

DRM Done In

Warner and Sony join the MP3 bandwagon

Following in the footsteps of EMI and Universal, both Warner Music Group and Sony announced in January their plans to remove digital rights management from the music they sell online, thus making it possible for consumers to listen to the songs they purchase on any device.

This marks a radical shift for the Big Four music labels, which had staunchly insisted that DRM was critical to the survival of the music business. No doubt the change of heart was due in part to consumers' outrage at paying for music hobbled by copy protection, but the labels also now stand united against the Apple iTunes monolith. All four are offering their open-format MP3s via Amazon's digital music store.

Sony artist Justin Timberlake is bringing sexy back—and now it comes sans DRM!

Netflix Streams to TV

After writing the book on movie-rental convenience, Netflix is about to add a new chapter that's sure to please consumers' growing appetite for immediacy. The online rental giant first began expanding its services when it gave subscribers the ability to stream select titles to their PCs. Now Netflix is taking the concept a step further with a plan that will have users streaming content directly to their TVs, thanks to a set-top box the company is developing with LG Electronics (partnerships with other consumer electronics makers could also be in the works). Expected in the second half of 2008, the box will allow Netflix to function much like the Amazon Unbox service available to TiVo subscribers. Pricing for the box has not been announced; the service will likely be included as part of a standard Netflix subscription.

A Key Convenience

SanDisk announces a USB flash drive that automatically backs up its

The Cruzer Titanium Plus 4GB drive will be available in March for $60 and come with six months of free online storage service; following that, the service will cost $30 per year.

FUNSIZENEWS

WARNER BACKS BLU-RAY

Warner Bros., which had recently been the only major movie studio to support both the HD DVD and Blu-ray formats is now aligning itself with just one camp. The company's decision to release all future high-def releases on only Blu-ray media is a big blow to HD DVD, which now has the support of just two of the eight major movie studios: Paramount and Universal. According to Warner, the move is meant to alleviate consumer confusion and spur the HD adoption rate.

SEARS CAUGHT SPYING

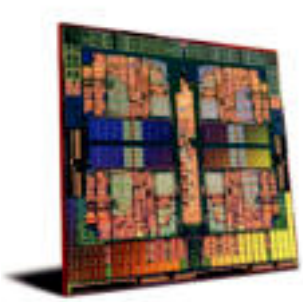
Visitors to the Sears and Kmart websites (both owned by Sears) who opted to participate in the sites' online community likely had no idea that tracking software was installed on their machines to analyze *all* of their online activities. This was the conclusion of security researcher Benjamin Googins, who exposed both the presence of the comScore software and Sears's improper notification practices.

VONAGE SETTLES SUITS

It's been a tough year for Vonage. The popular VoIP provider has been sued by Verizon, Sprint, AT&T, and Nortel Networks over various patent infringements, but as of January the company has finally settled all suits, and though it has lost several million dollars in the process, it looks like Vonage will survive—at least for now.

MORE DELAYS FOR PHENOM

AMD will delay the already late Phenom 9700 and 9900 parts to concentrate on low power consumption chips. Both CPUs were initially expected by the end of this winter but AMD has shifted attention to a new "green" 1.8GHz Phenom 9100E CPU. AMD denies rumors that the delay is due to continued issues with the TLB bug, saying that issue has been fixed.



NETWORK STORAGE

NAS Box **vs.** Windows Home Server

Traditionally, there have been two distinct routes to achieving always-on storage at home: extremely powerful (but expensive, loud, and difficult-to-maintain) server rigs or generally underpowered network attached storage (NAS) boxes. However, the divide between NAS boxes and full-blown servers has shrunk. We've recently tested speedy NAS boxes packed with server-like features, and companies are now shipping smaller, less-expensive servers with Microsoft's new Home Server platform. This month, we compare HP's MediaSmart EX475 Home Server (reviewed in the February issue) to our favorite NAS box, the QNAP TS-109 Pro (see **http://tinyurl.com/yomys5**), to determine whether a server or a NAS device is the better candidate to fulfill our network-storage needs.

BY WILL **SMITH**

HOME SERVER
HP MediaSmart EX475
$750 (includes two 500GB drives),
www.hp.com

round 1

PERFORMANCE

This is a tough category to judge because the NAS boxes we've tested have varied wildly in file-transfer speeds. While the QNAP's TS-109 Pro delivers benchmark results that are competitive with those of a dedicated server rig, we've also tested NAS boxes that are slower than an old-school sneakernet. In other words, not all NAS boxes are created equal.

Home Server boxes, on the other hand, must meet a minimum spec, and since Home Server utilizes the standard x86 platform, the sky's the limit when it comes to speed. While we're sure vendors will ship underpowered Home Server rigs, the worst-case scenario for these devices is still much better than the worst case with a NAS box.

WINNER: HOME SERVER

round 2

PRICE

Here's the breakdown: HP's MediaSmart EX475 costs $750 and comes with two 500GB drives. The QNAP TS-109 costs just $330, but to achieve the same amount of storage, you'd have to buy a terabyte drive for the NAS device's single bay, which adds another $300-$350. That makes the latter slightly less expensive, but the lack of expansion options should also be considered—the MediaSmart can double its capacity with two more relatively cheap $100 500GB drives.

WINNER: TIE

round 5

POTPOURRI

The Home Server architecture includes a powerful API that encourages the development of compatible third-party tools and applications. In fact, end users are already enjoying Home Server support for their favorite services and devices. For example, add-ins let you sync your photo collection with Flickr and share your media with TiVo boxes. What's more, Home Server monitors the health of all the PCs on your network, alerting you when a machine hasn't been backed up, lacks recent virus definitions, or has a failing hard drive. NAS boxes simply don't do that. When you factor in Home Server's per-folder configurable data redundancy, these devices just look sweeter.

WINNER: HOME SERVER

round 4

FEATURES

While we've tested some NAS devices that include aftermarket backup software, it can't compare to Home Server's rich feature set. Home Server's backup process is seamless: Simply install a small Terminate and Stay Resident (TSR) on your PC, and the server will automatically wake it up for backups every night. Media sharing is even simpler: Dump your music, videos, and photos into the appropriate folders, and Home Server will automatically stream them to any UPnP-enabled device, such as a dedicated streaming box, an Xbox 360, or a PS3. And Home Server includes its own dynamic-DNS-compatible service, which makes it easy for you to connect to your Home Server even when you're not at home. While some NAS boxes include similar functionality, there's almost always some sort of caveat.

WINNER: HOME SERVER

round 3

By using a low-power embedded processor instead of a power-thirsty desktop CPU, even the speediest NAS box consumes much less juice than

ing, the MediaSmart drew about 80W, while the QNAP device pulled just 12W when performing the same sorts of activities.

WINNER: NAS BOX

NAS BOX
QNAP TS-109 Pro
$330 (w/o drive), www.qnap.com

And the Winner Is...

A NAS box, for the most part, simply sits there. While it may include features like media streaming or a BitTorrent client, it's primarily a data bucket that sits on your network. A Home Server device offers the same functionality as a garden-variety NAS, and it's available at a comparable price—but it also includes seamless backups, integrated media streaming,

Keep in mind, however, that the emergence of Home Server devices will push down the price of NAS boxes in the coming months. While a decent NAS device with 1TB of storage costs close to $700 today, we'd be shocked if prices remain that high a year from now, and that could completely change the value proposition for the whole network storage category. MPC

Our consumer advocate investigates...

✓Remedial Math ✓KillerPings.com Goes Under ✓Norton's Three-User License

Chanel, watchdog of the month

FUZZY MATH

A dog pound full of readers barked that the Dog used some bad math in his February column that took iPodMechanic.com to task for its handling of Esther Wheat's iPod repair. To sum up, the Dog called iPodMechanic.com on the carpet for recycling Wheat's iPod without giving her a chance to reclaim it. The Dog also chided iPodMechanic .com for not honoring its 180-day warranty policy. The problem, readers pointed out, is that the dates the Dog reported (December 8, 2006–June 16, 2007) add up to 190 days (or 183 or 191, depending on which reader you ask), which is just outside of Wheat's 180-day warranty.

What went wrong? Rather than breaking out a calendar and a pen (which is difficult for someone with paws), the Dog relied on an Internet time calculator, which either had a burp or, possibly, the Dog got distracted by a Frisbee and entered the wrong dates. Wheat, who did receive a replacement for her recycled iPod, maintains that the dates iPodMechanic used for her warranty period are not correct, that she was within the 180-day period, and that the warranty was not the main issue concerning her experience with the company.

Although the Dog stands by his assertion that iPodMechanic.com erred when it recycled Wheat's iPod without giving her a chance to get it back, he obviously erred on the warranty times and apologizes to iPodMechanic.com for that error. Woof.

KILLERPINGS.COM KILLED

We have been renting Halo game servers and a TeamSpeak voice chat server from KillerPings.com for the past two or three years. The pings were always some of the lowest and the service was excellent; our primary Halo server has been ranked in the top 10 in the world for quite a while.

Back in mid-November, we paid for another three months of service. Unfortunately, only a day or two after that, many customers' servers went offline (including ours), reportedly due to a massive hardware failure. I figured, "Fine, that could happen to anyone." Because of our past good experience with KillerPings, I trusted that the company would fix the situation, even though it was taking a long time and its customer support seemed to be too busy to respond as quickly as it used to. Over the following several weeks, KillerPings moved some servers to its "partner," Art of War Central, but said the billing would remain with KillerPings. Our server has not worked since the move, and I suspect it is because of a misconfiguration.

But that's not the worst of it. Around 10 p.m. on January 1, 2008, all servers still hosted by KillerPings went offline, and the company's website says it has been suspended by its ISP. Happy New Year, indeed! Several customers have posted on various forums that KillerPings packed up and disappeared, taking everyone's money. Other customers report that the contact information has been changed, but a Google search for KillerPings pulls up an unofficial support page put together by customers. Someone mentioned that PayPal has a claim process that allows you to recover your payments. I tried this, but since my claim was placed 47 days after my payment, PayPal automatically closed the claim (PayPal's site says you should file a claim within 45 days). Still, I emailed PayPal support asking them to reinstate the claim, but I don't know if they will do anything.

What happened to KillerPings? And more importantly, what recourse do we have at this point? Are we out the $130 we paid KillerPings back in November or is there still some way to recover it?

— Rob Zerr

KillerPings.com left its employees and customers hanging when it mysteriously shut down on New Year's Day.

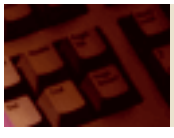
Rob, after much gumshoeing, KillerPings.com's disappearance is still a mystery, but the Dog has discovered that the company has left perhaps a few hundred customers in the lurch.

On New Year's Eve, one of the owners of KillerPings, Chuck Lowney, showed up at the company's Chicago co-location provider, Gigenet.com and began disconnecting its servers.

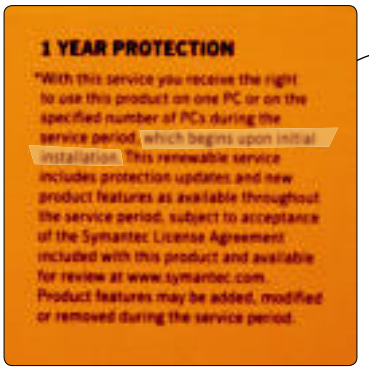
An employee stopped Lowney and police were called to the office as well. About 15 servers were left in place as collateral. KillerPings.com, according to Gigenet.com, is behind on its bills to the tune of about $26,000.

According to Steve Phallen, owner of Art of War Central, his company had agreed to take on some of KillerPings.com customers after the company had a hardware failure. Phallen said he had also been in talks to buy KillerPings and was prepared to cut a check when the company simply shut down and all of its customer data was lost.

"We would have liked to have added it to our business," Phallen told the Dog. "We don't know what happened, but the whole thing just sort of fell apart over there." Phallen says he doesn't understand why the owners of KillerPings.com



Got a bone to pick with a vendor? Been spiked by a fly-by-night operation? Sic the Dog on them by writing **watchdog@maximumpc.com.** The Dog promises to answer as many letters as possible, but only has four paws to work with.


1 YEAR PROTECTION
*With this service you receive the right to use this product on one PC or on the specified number of PCs during the service period, which begins upon initial installation. This renewable service includes protection updates and new product features as available throughout the service period, subject to acceptance of the Symantec License Agreement included with this product and available for review at www.symantec.com. Product features may be added, modified or removed during the service period.

With Symantec's products, all licenses start on the day you first install the product.

didn't just sell the company to him. Phallen went on to say that the 80 or 100 KillerPings.com customers still being hosted on Art of War Central hardware will be contacted and offered a chance to sign up with his company.

The possible sale of KillerPings.com also came as a surprise to former employee Tom Smith, who told the Dog that he had no idea the company was in trouble. Smith, who also runs the game support site Alliedwarclans.com, said that if KillerPings.com's owners knew they were going to shut down the company, why not let the employees and its customers know in advance so they could back up their files first?

Smith said many people lost gigabytes of custom maps, websites, and customized server scripts when KillerPings.com folded. Even worse, some customers are unable to move their domains away from KillerPings.com

"I'm really pissed off at the way they treated their customers," said Smith, who also said he believes the company was still processing new orders in December as things were falling apart. Smith went on to say that as far as he knew, the business was going well, and he estimated the company had close to 1,000 clients at one point. He said the owners had invested in custom applications and had just finished doing a redesign of the site. Support had been top notch and the pings were truly killer. Smith said KillerPings.com did have a setback when Electronic Arts did not select it as one of the companies to host ranked Battlefield 2142 servers. The company also didn't make the cut to host ranked servers for Enemy Territory: Quake Wars either.

Smith hasn't had any contact with the owners of the company since the meltdown and said the handful of other employees were also kept in the dark about a possible sale to Art of War Central. Smith said there was chatter that a fall-

[illegible] really knows.

What do the owners have to say? Nothing. The Dog's phone calls and emails to Lowney and co-owner Alec Kopman were not returned.

Rob, the Dog believes you are sadly out of options. Customers who paid with credit cards, however, may be able to get refunds through their credit card companies.

READING THE FINE PRINT

I want to warn people about Norton AntiVirus retail packs with a "three user license." I went to install my third license last night on my mom's PC, and it had only 43 days remaining! I contacted Symantec support only to be told that all three licenses start on the day you install the first one! How big a scam is this? According to Symantec, this policy is spelled out in the EULA. Too bad I can't find it on the box. Long story short, I've got a three-user license that is totally worthless. I thought I was being a smart consumer. Shame on you, Symantec!

—Greg Garrett

The Dog spoke with Symantec officials who said that while they feel your pain, the company does actually spell out its policy quite clearly on the box. Printed on the box for a three-PC license of Norton AntiVirus 2008 is this statement: "1 YEAR PROTECTION—With this service you receive the right to use this product on one PC or on the specified number of PCs during the service period, which begins upon initial installation."

The writing is small, but even the Dog has a problem faulting Symantec since the front of the box directs the consumer to the top of the box for more information. Just under where it says "1 year protection for up to 3 PCs per household" it also says: "See top for details." MPC

REINVENT

THE [WINDOWS] WHEEL

Forget what you *think* you know about Windows! Whether you use XP or Vista, these 51 tips and tweaks will give you a whole new OS **BY PAUL LILLY**

There's an unwritten rule that states, "To be considered a power user, you must tweak every aspect of your PC and assert man's dominance over machine." That means not only choosing the right combination of hardware and software to do your bidding but also tailoring Windows to perform the way you want it to, not the other way around. After all, you built your computer, so why should you have the reins pulled from your hands the moment you hit the power button? The answer is you shouldn't, and we're going to show you how to fine-tune Windows—from the way it looks to the way it functions, and everything in between.

We know what you're thinking: What could we possibly show you that you haven't already seen countless times before? Plenty. And if you think you've uncovered every secret there is to know about Windows, think again. These aren't your garden-variety tweaks that litter every Windows guide on the web. We've dug deep to find tips that will surprise and delight even the most seasoned power user. It doesn't matter whether you use XP or Vista; we cover both camps to bring you a smorgasbord of treats guaranteed to improve your OS experience.

INSIDE

XP 20
XP/VISTA 28
VISTA 34

XP Tips

You're sticking with Windows XP, and who can blame you? But it's still possible to teach this trusty ol' OS some new tricks

Make It Personal

Brand your PC with a custom logo

OEM vendors often dress up the System Properties screen with a custom logo and support information, giving prebuilt PCs an air of professionalism. Well guess what? You can add the same personal touch to your own machine in just a few easy steps.

Open up any photo-editing program and create a 180x114-pixel image. Save the image as a bitmap and name it oemlogo.bmp, then place it in C:\Windows\System32. Next, create a Notepad file in the same folder and save it as oeminfo.ini. OEM resellers use this file to enter customer-support information, but you can write whatever you wish as long as you use the following format:

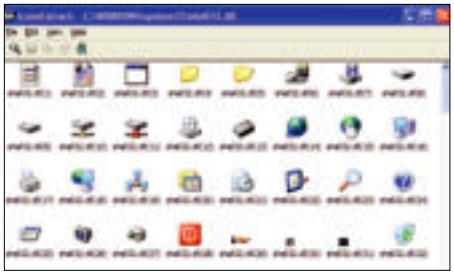
```
[General]
Manufacturer=Maximum PC
Model=Dream Machine

[Support Information]
line1=For even more great
tips visit
line2=www.maximumpc.com
```

If you need more space, just create a new line.

ICON DO IT!

Give Your Hard Drive a New Icon

Grab IconsExtract (free, **http://tinyurl.com/2p7c7x**) to extract existing icons from your system. When you find one you like, save it to the root of the drive you want to change (for example, C:\Cool_Icon.ico). Next, create a new file with Notepad and edit line one to read `[autorun]` and on line two write `icon=Cool_Icon.ico`. Save and name the file autorun.ini and reboot.



GO FOR A SCROLL

Alter the Scroll Bar's Dimensions

A wider scroll bar can make navigation an easier affair on a touch-screen panel, and power users can benefit from the additional real estate afforded by narrowing the scroll bar. Whatever your objective, open Display Properties in the Control Panel, click the Appearance tab, click Advanced, select Scrollbar from the Items menu, and go hog wild!

GROOVE WITH GOOGLE

Install Google Desktop, then Hack It!

Google Desktop (free, **http://desktop.google.com**) pounces all over Windows's built-in search, but to truly kick your search groove into high gear, you need to tweak a couple of settings. Under the Options menu, make sure HTTPS is unchecked to prevent Google from indexing sensitive information. Then click "Add drive or folder to search" and add any networked PCs so you can search for files across your network without ever leaving your chair. Finally, install the TweakGDS plugin (free, **http://tinyurl.com/2nwxb9**), which will let you designate a different folder or hard drive to store Google's indexing information.

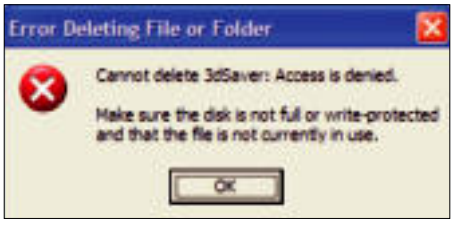
NO DUPLICATES FOR YOU!

Uncover 'No to All' Option

Whenever you copy multiple files from one location to another, Windows prompts you with an overwrite request if duplicate entries already exist. Selecting "Yes to All" can go a long way in preventing carpal tunnel, but where's the "No to All" button? It doesn't exist, but you can force Windows to act as though it does by holding down the Shift key the first time you press No.

IMPOSE YOUR WILL

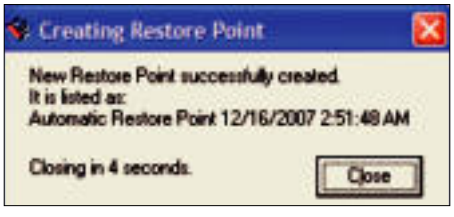
Delete an Undeletable File


Error Deleting File or Folder
Cannot delete 3dSaver: Access is denied.
Make sure the disk is not full or write-protected and that the file is not currently in use.
OK

Windows won't let you delete a file if it's currently in use, which is usually a good thing, but that can spell bad news when trying to rid your system of a nasty malware strain. Luckily, there's a workaround. Click the Start menu, select Run, and type `CMD` to bring up the Command Prompt. Now hit CTRL-ALT-DEL to open the Task Manager. Under the Processes tab, highlight explorer.exe and click End Process. ALT-Tab your way to the Command Prompt and then navigate to the directory of the file you're trying to delete using the CD command (`cd C:\Program Files\3DSaver`). Next, use the delete command to delete the offending file (`del 3DSaver.exe`). ALT-Tab back to the Task Manager, select New Task under File, and type `explorer.exe` to bring back the Windows shell. Alternately, try Unlocker (free, **http://ccollomb.free.fr.unlocker/**) and delete stubborn files through a svelte GUI.

READY, SET, RESTORE!

Create Restore Points on the Fly

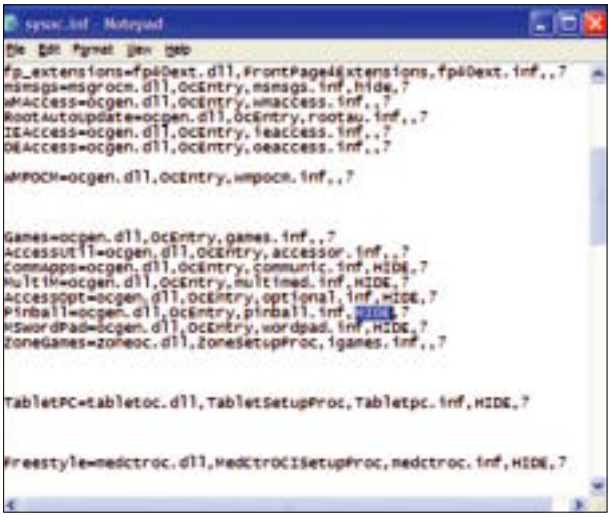


Uh oh! Did experimenting with beta software thrash your Windows install? Don't fret—fire up System Restore and revert to the last known good configuration. That is, if you have one. Windows doesn't always create restore points when it should, and who wants to go through the rigmarole of sifting through menus to manually create one? Now you don't have to, thanks to a VB script (free, **http://tinyurl.com/3rw0**) that does the job with just a double-click of the mouse.

PEEKABOO!

Uninstall Hidden Components

Find sysoc.inf in the C:\Windows\inf folder and edit it with Notepad. (If you don't see the inf folder, click Tools, View, and select "Show hidden files and folders.") Remove the word HIDE from any entries you wish to unhide, such as WordPad or Pinball, and then save the file. These will now show up in the Add/Remove Windows Components list.



SWEET RESTORATION

Stay Prepared with a Password Restore Disk

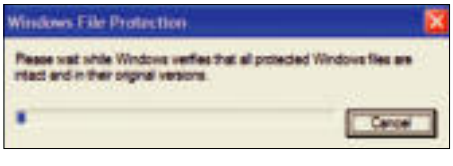
Open User Accounts in the Control Panel and select your account. Click the "Prevent a forgotten password" link in the left-hand pane and follow the prompts.

If you're on a domain, press CTRL-ALT-DEL to bring up the Windows Security dialog box and then click Change Password. In the "Log on to" box, click the local computer, select Backup, and then follow the prompts. Both methods require a floppy disk.

FIX 'ER UP

Scan System Files for Corruption

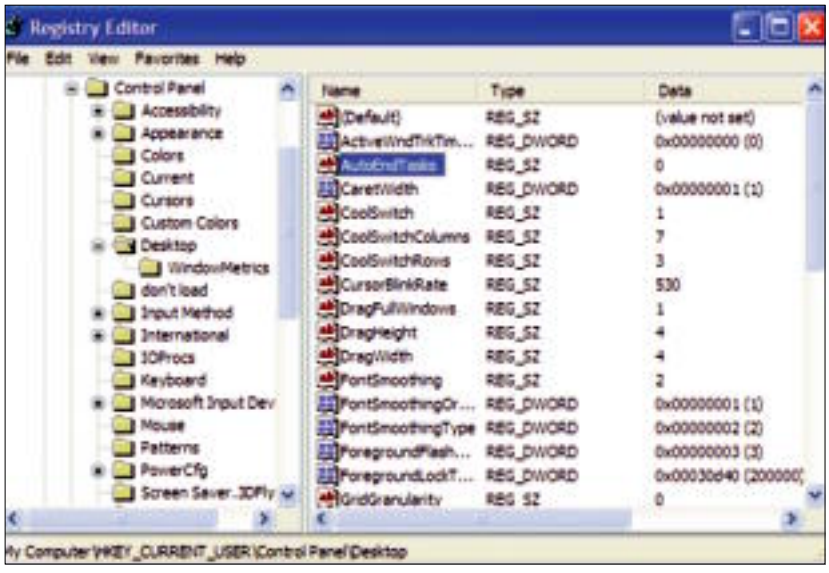
Malware infections and bad install routines are just two of the ways critical system files can become corrupt, but there's an easy fix to undo damage done by third-party software. Click the Start menu, select Run, and type `sfc /scannow` to run XP's System File Checker. Keep your Windows CD handy and insert it when prompted.


Windows File Protection
Please wait while Windows verifies that all protected Windows files are intact and in their original versions.
Cancel

AUTO-KILL HACK

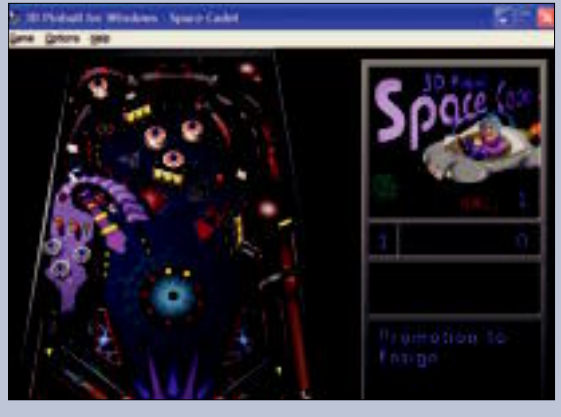
Automatically Kill Processes and Shut Down Quicker

Teach Windows how to shut down without nagging you about unresponsive processes. Open the registry and navigate to HKEY_CURRENT_USER\Control Panel\Desktop. Double-click AutoEndTasks and change the value from 0 to 1. Then double-click WaitToKillApp and change the value from 5000 to 1000. Finally, double-click HungAppTimeout and change the value from 20,000 to 3000.



High Score!

Become the new champ at old games



It's tough enough getting through the workday unscathed, and to make matters worse, most workplaces aren't going to let you install Counter-Strike to blow off some steam—oh the tyranny! That means you're stuck playing Minesweeper or Pinball, only Bob in accounting holds the high score in both and is quick to let everyone know. Here's how you can stick it to Bob. To freeze time in Minesweeper, minimize the app using the Windows Key + D combination and then restore the window. Then fire up Pinball and type `1max` at the start of a new game for additional balls or `bmax` for unlimited tries and an unbeatable score.

LIFE IN THE FAST LANE

Eliminate Lag and Speed up the Start Menu

A fully loaded rig pays dividends in everything from productivity apps to games, but no matter how fast your machine is, the Start menu still lags. To give the Start menu a much needed speed boost, click Start, select Run, and type `regedit`. Navigate to HKEY_CURRENT_USER\Control Panel\Desktop, double-click MenuShowDelay in the right-hand pane, and change the value from 400 to 5. Reboot and watch your Start menu fly!

GO UNIVERSAL

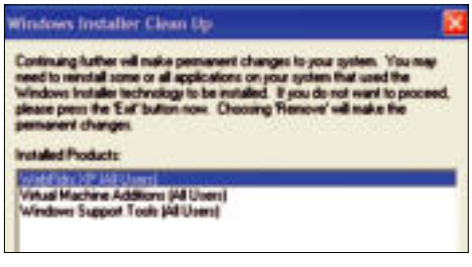
Apply One Folder's View to All Folders

XP allows you to view folders five different ways—thumbnails, tiles, icons, list, details—but what you select for one folder doesn't apply to all of them. Sure, you can configure each folder individually, but that takes far too long. To apply the same view universally, Go to My Documents, click Tools, then Folder Options, then select the View tab, and click Apply to All Folders.

TOOLS OF THE TRADE

Install Support Tools for Advanced Diagnostics

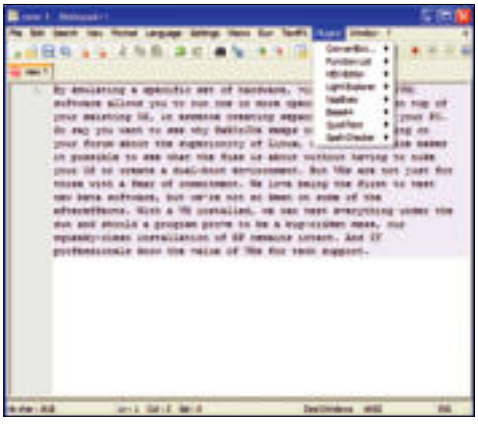
To be a true IT ninja, equip yourself with Windows Support Tools (free, **http://tinyurl.com/yja7vw**), a set of more than 100 troubleshooting utilities aimed at advanced users (view a complete list at **http://tinyurl.com/2k42ex**). Not all of them are gems, but a few notable standouts include pviewer, for gathering information about running processes on remote computers; msicuu, to remove installer information when a program's uninstaller gets borked (power outage, for example); and windiff, to compare files and see which is more recent, along with line-by-line code comparisons.


Windows Installer Clean Up
Continuing further will make permanent changes to your system. You may need to reinstall some or all applications on your system that used the Windows Installer technology to be installed. If you do not want to proceed, please press the 'Exit' button now. Choosing 'Remove' will make the permanent changes.
Installed Products:
Virtual Machine Additions (All Users)
Windows Support Tools (All Users)

PIMP MY NOTEPAD

Upgrade to Notepad++

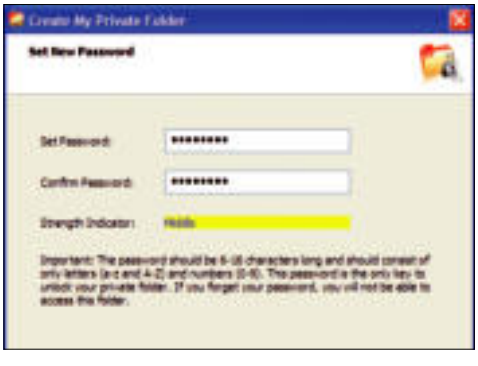
Jotting down notes with Notepad is only slightly more advanced than chiseling in stone, but we still find ourselves using the rudimentary editor for scrawling quick grocery lists and composing HTML code. With Notepad++ (free, **http://tinyurl.com/552wn**), we can do both at the same time! A tabbed interface is just one of the many features included, along with an almost endless array of coding options, drag and drop documents, multi-view features, and much more.



LOCKDOWN

Encrypt and Password Protect Your Files

No sooner was it released than Microsoft pulled the plug on a utility called My Private Folder. The password-protected folder sat on your desktop, encrypting any files you put inside it. So why doesn't MS offer it anymore? With no backdoor access, IT professionals feared facing the wrath of users who had forgotten their passwords, and parents fretted over what files their kids might be hiding. If you're OK with those risks, you can still download the utility from **http://tinyurl.com/kxdxs**.



DEEPER SLEEP

Enable Hibernate in the Shut-Down Dialog

Putting your PC into Standby conserves power without shutting down your computer, but if there's a power outage, any open programs and unsaved work will be lost. Using Hibernation tackles this issue by first taking a snapshot of your desktop and saving it to your hard drive before powering down, but Microsoft neglected to include a Hibernate button in the shut-down dialog box. To fix this, first make sure you've enabled hibernation under Power Options in the Control Panel. Next, go into the registry and navigate to HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Windows and create a new key called System (right-click Windows and select New > Key). Highlight System and create another key called Shutdown (you should now be in HKLM \SOFTWARE\Policies\Microsoft\Windows\System\Shutdown). Now create a DWORD value named ShowHibernationButton and change the Data from 0 to 1. You should now see the Hibernate button in the Shutdown dialog. If not, you'll need to request a hotfix from Microsoft at **http://tinyurl.com/ccbpw.**

PAINT LIKE PICASSO

Goodbye MS Paint, Hello Paint.NET

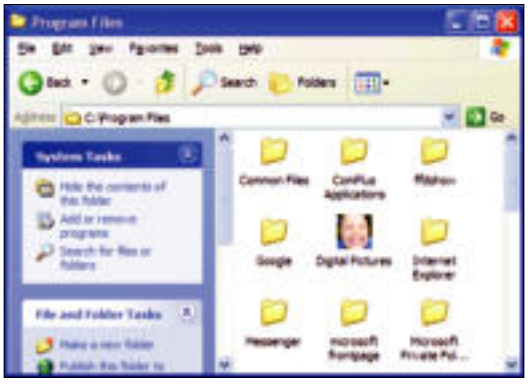
Capable photo-editing suites are often too expensive if all you're interested in is the occasional doodle, and the learning curve requires a further time investment. Solve both problems with Paint.NET (free, **www.getpaint.net**), which combines the ease of use found in MS Paint with enough functionality to release your inner Rembrandt!

ICON DO IT, PART 2!

Make Your Own Icons

Who wants boring old icons when you can make your own? Fire up any photo-editing program and create a new 48x48 pixel image, or resize an existing photo. Save the image as a bitmap and change the file extension to .ico (e.g., MPC.ico).

To apply your custom icon, right-click a folder on your hard drive, select Properties, then Customize, then Change Icon. Or if you prefer to change system icons, open Display Properties and click Customize Desktop under the Desktop tab. You can change icons for all file types by opening My Computer, clicking Tools, Folder Options, File Types, Advanced, then Change Icon.



LIGHTS, CAMERA, WALLPAPER!

Use a Video Clip as Your Background

Dreamscene enables Vista Ultimate owners to set video clips as wallpaper, and with the help of VideoLAN (free, **www.videolan.org/vlc**), you can get the same effect on XP. Select the video you want to display, right-click while it's playing, and select Wallpaper. Create a playlist with multiple video clips and then configure VideoLAN to loop your selections by clicking Tools, Preferences, Playlist, and checking Repeat All.

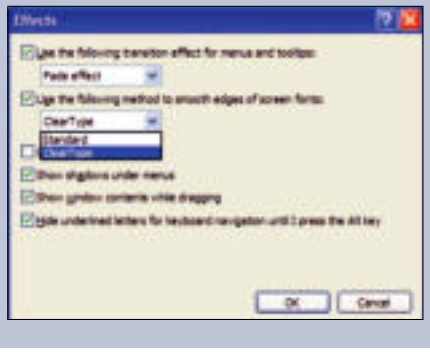
Golden Oldies

Three 30-second changes to improve XP

1 **The first thing we do with every new XP install is turn on ClearType to clean up those unsightly fonts. Go to Display Properties and select the Appearance tab, then click Effects. Choose ClearType in the second pull-down menu and make sure the box above it is checked.**

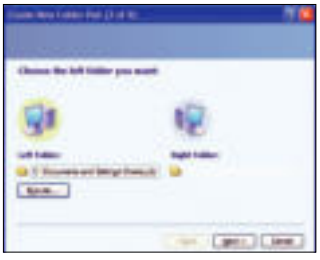
2 **Often, we need access to hidden files and folders to apply power-user tweaks, and the second thing we do on every XP machine is make these visible. Under My Computer, click Tools, Folder Options, View, and then click the "Show hidden files and folders" radio button.**

3 **We don't anticipate any BSODs on a new XP install, but if it does happen, we want to be prepared. By default, Windows will automatically restart if it encounters an error, but those blue screens contain key information that helps us decipher what went wrong. To stop XP from restarting, right-click My Computer and select Properties. In the Advanced tab, click Settings under Startup and Recovery, and then uncheck "Automatically restart."**



BETTER BACKUPS

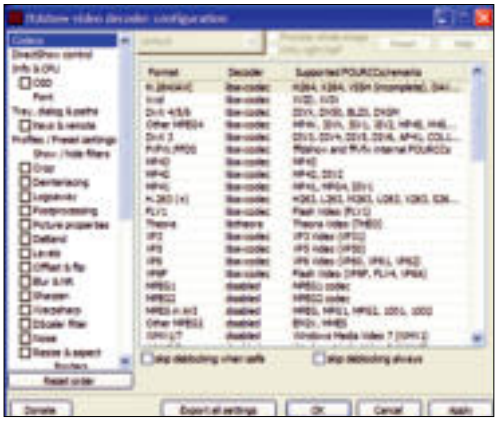
Sync Your Backup Routine



If you don't have a backup routine in place, then get one. Now. Then install Microsoft's SyncToy v2.0 Beta (free, **http://tinyurl.com/2cu9fh**) to back up files from one folder to another on different hard drives, or across a network or an external device. SyncToy even keeps track of renamed files, so you won't end up with duplicates.

CODEC CORNUCOPIA

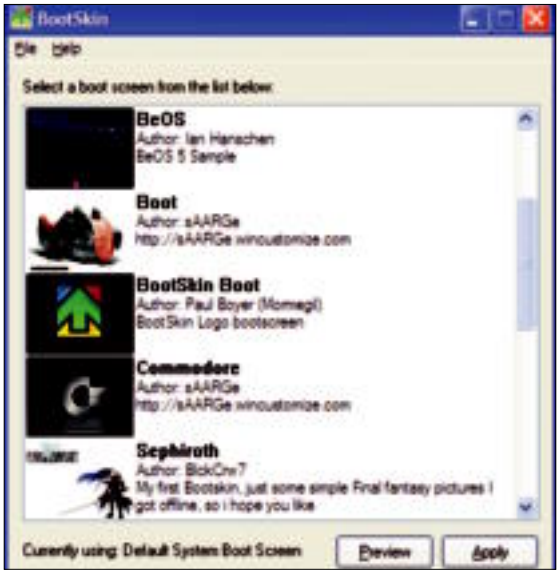
Improve Video Viewing with a Codec Library



Life would be so much easier if all video clips adopted a unified standard, but instead we're forced to hunt down codec after codec to play an assortment of videos. At least, that's how we used to do it, until we found ffdshow tryouts (**http://ffdshow-tryout.sourceforge.net/**). Ffdshow sports an expansive codec library, several filters, and the ability to display pertinent details about the file it's playing. CPU-utilization monitoring and the ability to grab screenshots add icing to the cake.

LOGO-LICIOUS

Customize XP's Boot Logo



Tired of the same old boot screen? Change it up! There are two methods for altering XP's boot logo—one involves risky system-file edits that put your OS at risk, the other entails downloading BootSkin (free, **http://tinyurl.com/358lj**). Play it safe with the latter and click your way to a new boot screen with one of the bundled logos. Don't see one you like? Choose from hundreds more available for download or follow the tutorial at **http://tinyurl.com/367khw** and make your own!

XP/Vista Tips

The following tips don't discriminate—they will improve your computing experience equally, whether you're rocking Microsoft's new or old OS

TAKE CONTROL

Make Your Own Control Panel

We're willing to bet you never use half the items in the Control Panel, but did you know you can make a Control Panel that reflects your particular habits? Here's how: Right-click the Start menu and select Explore. Create a new folder and give it a descriptive name, such as Custom Control Panel. Drag and drop only the tools you'll actually use from the original Control Panel into your new one, renaming as you see fit. Change the icon so it stands out in the Start menu.

PICK ME! PICK ME!

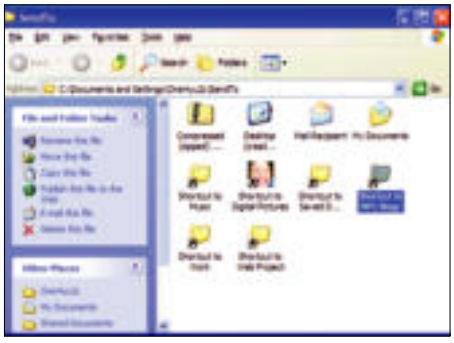
Disable Highlighting New Programs

Every new program in XP and Vista gets highlighted in the Start menu as if to say, "Hey, remember when you installed me?" That's great for those afflicted with extremely short attention spans, but not much use for the rest of us. To rid your Start menu of these unsightly reminders, right-click the Start button and select Properties, select the Start Menu tab, and click Customize. In Vista, scroll down and uncheck "Highlight newly installed programs." You'll find the same option in XP under the Advanced tab.

DEMAND A NEW MENU

Add Entries to the Send To Menu

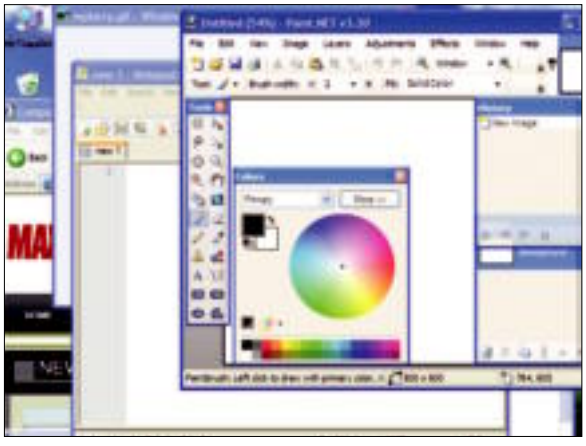
Moving files with the Send To command can save oodles of time, but it doesn't do you any good if the destination you're looking for doesn't appear in the menu. To add your own destinations, select Run from the Start menu (type `Run` in the search box on Vista) and type `shell:sendto`. Create a shortcut of the folder or program you want to appear and move it to the Send To folder you just opened.



WHAT A DRAG!

Minimize Windows and Drag Files with Ease

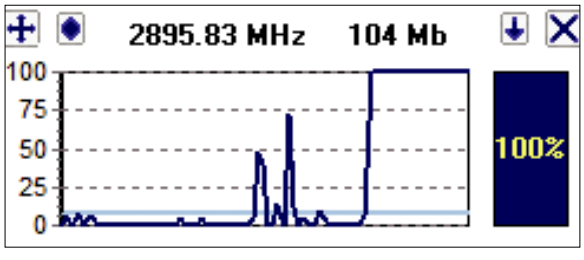
Ever grab a file on your desktop only to realize the destination folder's sitting behind an open window? To get around this, drag the file to an empty space in the taskbar and all open windows will minimize, allowing you to move the file wherever you want. Using this method, you can hover files over minimized windows to restore them.



RESOURCE AUDIT

Monitor CPU and RAM Usage

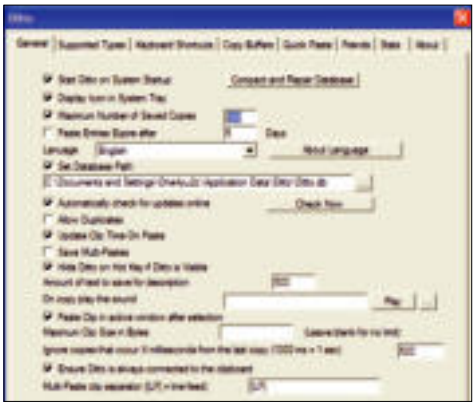
We can already keep tabs on our CPU and RAM through the Task Manager, but there's a better way. CPUMon (free, **http://tinyurl.com/363k6f**) displays the same information but ups the ante with an adjustable, unobtrusive transparent graph, CPU-speed monitoring, statistics that include the average CPU and memory usage, and a handful of other options.



NEVER FORGET

Enhance the Clipboard with Ditto

Download Ditto (**http://sourceforge.net/projects/ditto-cp/**) and take Windows's clipboard to new heights. Ditto retains up to 500 copied entries, including images, and stores the information on your hard drive, so you won't be thwarted by a power outage or system reboot. Stay productive by exporting saved entries and transferring them to another computer, paste HTML as plain text, perform keyword searches, and apply hotkey shortcuts to the first 10 items.



Build a Button (or Two)

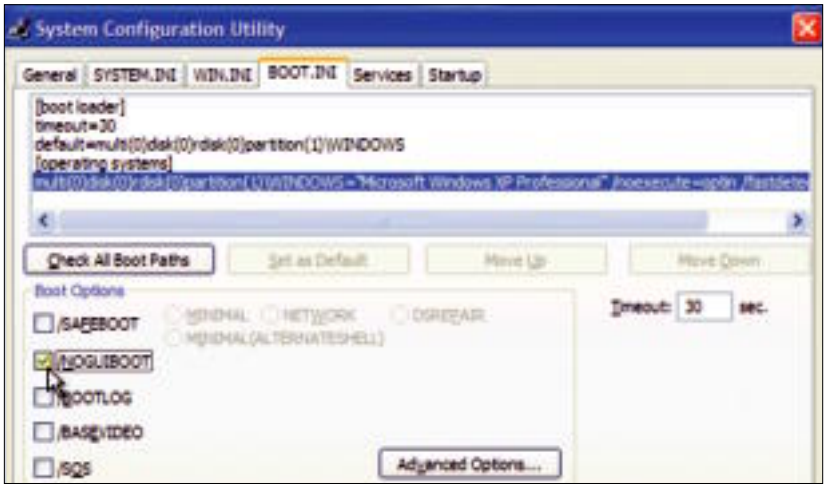
Put your Restart and Shut Down buttons in plain sight—because you can

Forget about mucking around in the Start menu and instead create desktop shortcuts for shutting down and restarting your system. Right-click your desktop and select New > Shortcut. In the pop-up window, type `shutdown -s -t 00` to create a shutdown shortcut and `shutdown -r -t 00` to create one for restarting. Give your new shortcuts custom icons (see page 24) and then drag them to the Quick Launch bar for even easier access.

GET FASTER BOOTS

Remove the OS Logo and Improve Boot Times

Until instant-on technology makes a breakthrough in home computing, we're left to our own devices to reduce system boot times. One surefire way to save a few seconds is by disabling the boot logo. Open the Start menu, select Run, and type `msconfig`. Under the Boot.ini tab, check the /NoGuiBoot box and apply the change.



SIZE UP THE SITUATION

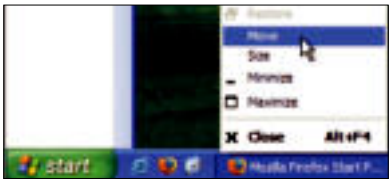
Resize Windows to Specific Dimensions

Sizer (free, **www.brianapps.net/sizer.html**) displays the dimensions of any open window while resizing, making it an invaluable tool for web developers and anyone interested in grabbing screen captures. Manually resize a window to any resolution, or right-click and select a preset dimension, including any custom dimensions you create.

HIDE AND SEEK

Move Off-Screen Windows Back into View

It's a shame that SLI and CrossFire still don't support gaming on multimonitor setups, and to add insult to injury, there's always at least one open window that gets stuck out of view when in single-monitor mode. You might be tempted to reboot or even uninstall/reinstall the offending application, but you needn't resort to such drastic measures. Instead, right-click the application in the taskbar, select Move, and then use your arrow keys to bring the window back into view.



EXPRESS YOURSELF

Change the Logon Background

Just like our clothes, our PCs are an extension of us, and we should dress them accordingly. Logon Studio (free, **http://tinyurl.com/2kuys7**) helps in this endeavor. The program lets you choose from a wardrobe of more than 500 logon backgrounds (**http://tinyurl.com/mh7eq**). Can't find a style to suit your tastes? Make your own background from scratch or edit an existing background.

DUAL-BOOT DUEL

Change Dual-Boot Default to XP

Because of the way Vista's boot loader works, you'll have much better luck with your dual-boot setup by first installing XP and then installing Vista. By going this route, Vista loads as the default option, but you can change this without any adverse effects. In Vista, right-click My Computer and select Properties, then Advanced system settings, then the Advanced tab. Click Settings under Startup and Recovery and select Earlier Version of Windows from the pull-down menu.

HOTKEY HOEDOWN

Know Your Common Shortcuts

Many common Windows tasks come assigned with shortcuts; here are five guaranteed to increase productivity:

Shift+Del: Bypass the recycle bin and permanently delete files

ALT+Print Screen: Nab a screenshot of just the active window to the clipboard

Windows Key+M: Minimize all open windows

CTRL+ESC: Bring up the Start menu

Shift+Tab: Tab backward through a form

HOTKEY HOKEY POKEY

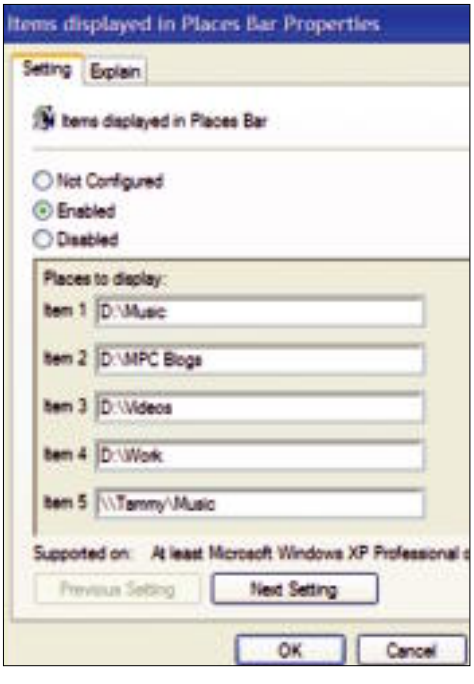
Assign Hotkeys to Common Tasks

Quick, try to open the Task Manager without lifting your hand from the mouse. Unless you have unusually long fingers or a third hand growing from your torso, you can't hit the CTRL-ALT-DEL combination without contorting into an unnatural position. Luckily, there's an easy workaround. Navigate to C:\Windows\System32 and create a shortcut for taskmgr.exe. Right-click the new shortcut, select Properties, and assign a new hotkey combination in the Shortcut tab. Use this trick for any commonly used application.

SIDEBAR BUFFET

Add Locations to the Save In Sidebar

On the left-hand side of the Save As dialog box sits a Save In sidebar; in it are common locations where you might want to save a file. To add your own folders to this list, type `gpedit.msc` in the Run box (or search box in Vista), then navigate to User Configuration, Administrative Templates, Windows Components, Windows Explorer, Common Open File Dialog; then, double-click Items Displayed in Places Bar. Here you can add up to five locations, including remote folders residing on your home network (e.g., \\MaxPC-Quad\Pictures).



Vista Tips

Vista's still brand-spanking new, but there are already some things you can do to make it perform better

PLAY ARMCHAIR AUDITOR

Generate Problem Reports and Look for Solutions

Vista keeps a meticulous record of every error that's ever caused a program to stop working or presented a compatibility problem, but even better, you can make Windows check for solutions and save yourself a recurring headache. You'll find the Problem Reports and Solutions Wizard under System and Maintenance in the Control Panel. In the left-hand pane under Tasks, click "See problems to check" to bring up a list of applications; put a check mark next to any or all of them and click "Check for solutions."

GALLOP WITH A GUI

Access Advanced Options with Tweak VI

Optimize nearly every nook and cranny in Windows Vista through an intuitive GUI by installing Tweak VI (free, **http://tinyurl.com/24yz6q**). Tweaks run the gamut from the strictly visual to performance boosts—and include everything in between. Setting up a PC for the kids? Configure Tweak VI to hide a bevy of configuration options to prevent them from accidentally mucking up a system, and then password protect Tweak VI to keep curious fingers from undoing changes.

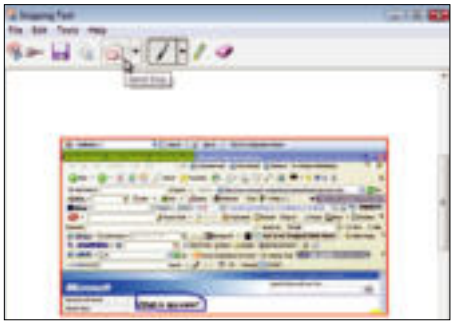
EASY AS 1-2-3

Open Quick Launch Programs with the Windows Key

Using the Windows key in combination with the numbers 0 through 9 will open up the corresponding sequential programs in the Quick Launch toolbar. Make sure the Quick Launch toolbar is visible (if not, right-click the taskbar and select Quick Launch from the Toolbars menu) and then rearrange the first 10 programs however you see fit.

SNIP IT, SNIP IT GOOD!

Take Better Screen Captures with the Snipping Tool



Vista's built-in Snipping Tool does for screen captures what Bruce Lee did for kung fu movies, but without the cheesy sound effects. Just type `Snipping` into the search box and start taking screenshots like you've never taken them before. Draw a perfect box around the area you want to capture or use the free-form tool, then highlight or draw over the capture before saving it as a JPEG, PNG, GIF, or MHT file.

SLEEPLESS IN VISTA

Force the Sleep Button to Function as Shut Down

Vista's Start menu marks a departure from the familiar theme found in XP, and one such change includes swapping the Shut Down button for a Sleep icon. With a little bit of digging, you can bring back the Shut Down button. Navigate to the Control Panel, then System and Maintenance, then Power Options. Under the selected power plan, click "Change plan settings," and then click "Change advanced power settings." Expand "Power buttons and lid" and then "Start menu power button." Highlight Setting and choose Shut Down from the pull-down menu.

HEAR YE, HEAR YE

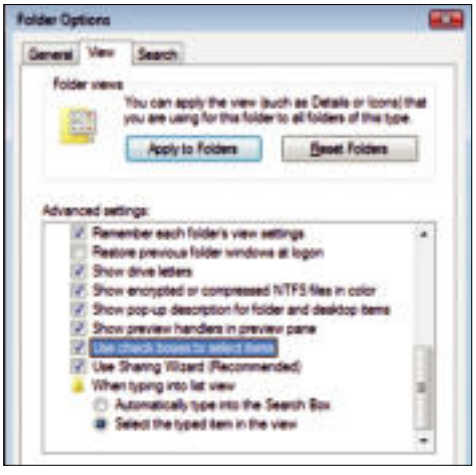
Enable DirectSound3D Hardware Acceleration

Vista giveth DirectX 10 and taketh away DirectSound3D, killing off hardware acceleration and EAX effects for the legacy format. But don't despair, because Creative came up with a workaround for Audigy and X-Fi owners. Install Creative's ALchemy software (free, **http://tinyurl.com/29ghqj**), let it automatically detect any installed DS3D games, and then click the arrow to move them to the right-hand pane, so they'll be translated into OpenAL.

THINK INSIDE THE BOX

Enable Check Boxes for Selecting Multiple Files

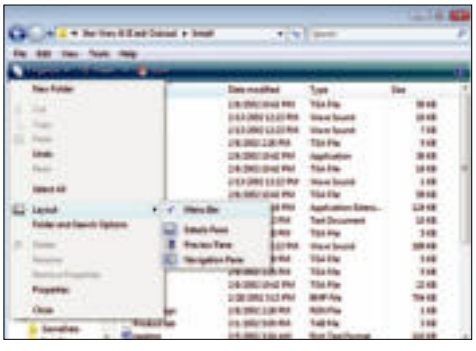
It never fails: Just as we've almost finished highlighting several files while holding down the Control key, our finger slips, instantly deselecting every single file. We thought there had to be a better way, and it turns out there is. Open My Computer and select Folder and Search Options from the Organize pull-down menu. Under the View tab, put a check mark next to "Use check boxes to select items." Now you can select multiple files by clicking on their check boxes.


Folder Options
General
View
Search
Folder views
You can apply the view (such as Details or Icons) that you are using for this folder to all folders of this type.
Apply to Folders
Reset Folders
Advanced settings:
Remember each folder's view settings
Restore previous folder windows at logon
Show drive letters
Show encrypted or compressed NTFS files in color
Show pop-up description for folder and desktop items
Show preview handlers in preview pane
Use check boxes to select items
Use Sharing Wizard (Recommended)
When typing into list view
Automatically type into the Search Box
Select the typed item in the view

BAR HOPPING

Restore the Menu Bar

In XP, we got accustomed to seeing File, Edit, View, Tools, and Help in the menu bar, but in Vista, Microsoft redesigned folders and windows so they resemble IE7's less than intuitive interface. One way to bring the menu bar back is to click Organize, highlight Layout, and select Menu Bar, which makes the change permanent. For a temporary solution, press the Alt key, which can bring up menus for windows that don't normally have them.



Holy Hotkeys!

Access everything quicker with Enso

Performs a Google web search on the selecte
google search terms
google map search terms
google news search terms
google blogs search terms
google image search terms
google define search terms

Think of Enso (free beta, www.humanized.com) as the ultimate hotkey, because that's essentially what it is. You unlock the magic behind Enso by holding the Caps Lock key (or designate a different key) and typing commands, which range from looking up highlighted words or phrases on Wikipedia to translating text. Load maps into emails, control your media player, check your Gmail, and much more without ever having to open the Start menu.

BE SHIFTY

Quickly Copy a File's Path to the Clipboard

In the pre-Vista days, copying a file or folder path to the clipboard meant you had to right-click, select Properties, highlight the path, right-click again, and select Copy. That's more steps than are in a Broadway musical! To perform the same action in Vista, hold the Shift key when right-clicking and select Copy as Path.

LET'S GET VIRTUAL

Save Search Results and Save Time

There was a time when hard-drive space was considered a hot commodity, but with 500GB and even 1TB drives now the norm, we find ourselves becoming digital pack rats. This also means we've developed a dependency on the Search function, but instead of repeating searches for the same sets of files, save the results to a virtual folder instead. After Windows finds the files you're looking for, click Save Search. Windows will even keep track of any changes to the search results, so you'll never receive outdated information. MPC

OVER YOUR

PHOTOGRAPHY BY MARK MADEO

CLOCK VIDEOCARD

You've already pushed your CPU to the edge and taken your RAM to its outer limits. Now it's time to put the screws to your videocard

Every company that sells videocards based on an AMD or Nvidia GPU starts out on fairly equal footing: When building their products, all companies follow the same reference designs and clock-speed guidance that AMD and Nvidia provide.

One of the oldest and easiest ways for these vendors to differentiate their products from the competition is to drop a free game in the box. Another popular tactic is to offer a more generous (or more fault-tolerant) warranty. But the *sexiest* way to stand out from the crowd is to overclock the card's GPU and memory. AMD and Nvidia both frequently sandbag their reference designs, leaving headroom for third-party manufacturers to goose the components' clocks, which can easily wring more performance from a stock card.

Many board manufacturers offer the same GPU and memory configuration in more than one SKU, tacking a premium to the price tag of cards that feature higher clock speeds. But consumers can play the overclocking game, too—without having to pay a penny in premiums. We'll show you how to use a free utility to easily squeeze more frames per second out of just about any videocard on the market.

But keep these facts in mind: Not every GPU is overclockable to the same degree. AMD and Nvidia intentionally segregate parts that exhibit a propensity for overclocking and then sell these for a higher price than less-pedigreed cards. As you push your GPU to the edge, variables ranging from the quality of your power supply to the build quality of your motherboard and the ambient temperature of your environment also come into play. Refer to the benchmark charts in this article to see how far we were able to push our cards but know that your mileage may vary.

BY MICHAEL BROWN

Three Simple Steps to Goosing Your GPU

Using the free utility RivaTuner, you can push the speed of any AMD or Nvidia videocard that's not currently running at its full potential

We chose RivaTuner over the overclocking utilities that AMD and Nvidia provide for one simple reason: This free third-party program offers far greater user control. The ability to permanently set a card's fan speed, the flexibility to play with the GPU's core clock (either separate from or in sync with its stream processors), and the capacity to create overclocking profiles for various computing scenarios are just a few of the ways RivaTuner stands out from other utilities.

To get started with your overclocking adventures, download RivaTuner (version 2.06) from **www.guru3d.com**. Click Yes to install available updates and accept the program's configuration defaults. RivaTuner will create a registry database, which might take a few minutes. Read the excellent readme file while you wait, especially the FAQ.

Now you're ready to begin. The steps for overclocking an AMD GPU are slightly different than they are for overdriving an Nvidia GPU, so proceed to the appropriate section for further instructions.

OVERCLOCKING AN AMD VIDEOCARD

STEP 1 SET FAN SPEED

In RivaTuner, click the Customize button in the Target Adapter box and then click the videocard icon to open a dialog box labeled "Low-level system tweaks." Click the Fan tab and then place a check mark next to "Enable low-level fan control." We want to see how far we can push the GPU, so we need to keep it as cool as possible. To do that, click Fixed. Now, push the slider all the way to the right (to 100 percent) and click Apply.

If the noise bothers you, set the fan speed to a lower value (but realize that you won't be able to push your card as far when using a lower fan speed). If you can tolerate the fan at 100 percent, place a check mark next to the box labeled "Apply fan settings at Windows startup," place a check mark next to the box labeled "Restore fan settings after suspended mode," and click OK.

STEP 2 ADJUST CORE CLOCK SPEED

Again, click the Customize button in the Target Adapter box and then click the videocard icon. Click the Overclocking tab and then place a check mark in the box labeled "Enable low-level hardware overclocking." Take the software's advice and reboot so that it can detect the default memory and core clock speeds. Relaunch RivaTuner after the system restarts.

Click the Customize button again and then the videocard icon to open the "Low-level system tweaks" dialog box. Place a check mark in the box labeled "Enable low-level hardware overclocking." Now, use the Core Clock slider to begin probing the limits of your GPU's core. If the core is stock-clocked, start with gross adjustments—say, 25MHz at a time (note: The arrow keys enable more precision than the mouse).

Use a smaller increment if the card is already overclocked or if your system becomes unstable immediately. The idea is to find the system's outer limit; once you've done that, back down in 5MHz increments until the system appears stable. Once you've achieved that, place a check mark in the box labeled "Apply overclocking at Windows startup," click Save, and then click the OK button.

Before moving on to overclock the memory, stress-test the system with a benchmark that can run unattended for at least one hour. We use the two Shader Model 3.0 tests from Futuremark's 3DMark06 test suite because they can be repeated up to 99 times. The free version of 3DMark06 doesn't run these benchmarks, but two other widely used stress tests are available for free: Nvidia's GeoForms (downloadable from **http://tinyurl.com/ysxok4**) and Masaki Kawase's Rthdribl (downloadable from **http://tinyurl.com/c4d3q**).

STEP 3 ADJUST MEMORY CLOCK SPEED

This step is identical to Step 2, except you'll now be adjusting the Memory Clock slider. You'll also want to bump your clock in smaller increments this time—say, 5MHz to 10MHz at a time. A warning icon in the form of a yellow triangle with an exclamation point will appear if RivaTuner thinks you're getting too aggressive, but this isn't necessarily a sign that you're going too far; you won't know that until you stress-test the system.

If the system seems stable, place a check mark next to "Apply overclocking at Windows startup," click Save, and then click OK. Repeat your stress test for at least one hour. If you run into stability problems after adjusting the core or memory clock speeds, reopen the System Tweaks dialog box, click the Overclocking tab, and click the Default button to reset the card to its original values.

BENCHMARKS BEFORE AND AFTER: RADEON HD 3870

	STOCK 775MHz/1.125GHz	OVERCLOCKED 851MHz/1.143GHz
3DMARK06 GAME 1 (FPS)	23.2	24.4
3DMARK06 GAME 2 (FPS)	20.3	22.0
QUAKE 4 (FPS)	86.7	92.1
SUPREME COMMANDER (FPS)	30.0	30.4
FEAR (FPS)	57.0	59.0

Our test bed consisted of an Intel D975BX2 motherboard, an Intel 2.93GHz Core 2 Extreme X6800 CPU, and 2GB of Corsair DDR RAM.

OVERCLOCKING AN NVIDIA VIDEOCARD

STEP 1 SET FAN SPEED

In RivaTuner, click the Customize button in the Target Adapter box and then click the videocard icon to open a dialog box labeled "Low-level system tweaks." Click the box labeled "Enable low-level fan control." Take the software's advice to reboot at this time, so it can detect the fan's default state. Relaunch RivaTuner after the system restarts.

We want to see how far we can push the GPU, so we need to keep it as cool as possible. To do that, click Fixed. Now push the slider all the way to the right (to 100 percent) and click Apply. If the noise bothers you, set the fan speed to a lower value (but realize that you won't be able to push your card as far when using a lower fan speed). If you can tolerate the fan at 100 percent, place a check mark next to the box labeled "Apply fan settings at Windows startup" and click Save. Place a check mark next to the box labeled "Restore fan settings after suspended mode" and click OK.

STEP 2 ADJUST CORE CLOCK SPEED

Now, click the Customize button in the Driver Settings box and then click the videocard icon. Click the box labeled "Enable driver-level hardware overclocking." Here again, take the software's advice and reboot so that it can detect the default memory and core clock speeds. Relaunch RivaTuner after the system restarts.

Return to the Driver Settings window in the main RivaTuner dialog box. Click the Customize button and then the videocard icon to open the System Tweaks dialog box. Place a check mark in the box labeled "Enable driver-level hardware overclocking" and select Performance 3D from the drop-down menu. Nvidia clocks its shader processors independently of the GPU's core. RivaTuner defaults to linking the two components together, so increasing the speed of the core automatically and relatively overclocks the shader processors. We'll leave them linked for this tutorial, but if you're feeling saucy, experiment by unlinking the two by removing the check mark next to Link Clocks.

Now, use the Core Clock slider to begin probing the limits of your GPU's core. If the core is stock-clocked, start with gross adjustments—say, 25MHz at a time (note: The arrow keys enable more precision than the mouse). Use a smaller increment if the card is already overclocked or if your system becomes

unstable immediately. The idea is to find the system's outer limit; once you've done that, back down in 5MHz increments until the system appears stable. Once you've achieved that, place a check mark in the box labeled "Apply overclocking at Windows startup," and click the OK button

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This step is identical to Step 2, except you'll now be adjusting the Memory Clock slider. You'll also want to bump your clock in smaller increments this time—say, 5MHz to 10MHz a whack. A warning icon in the form of a yellow triangle with an exclamation point will appear if RivaTuner thinks you're getting too aggressive, but this isn't necessarily a sign that you're going too far; you won't know that until you stress-test the system.

If the system seems stable, place a check mark next to "Apply overclocking at Windows startup," click Save, and then click OK. Repeat your stress test for at least one hour. If you run into stability problems after adjusting the core, shader, or memory clock speeds, reopen the System Tweaks dialog box, click the Overclocking tab, and click the Default button to reset the card to its original values.

BENCHMARKS BEFORE AND AFTER: GEFORCE 8800 GT

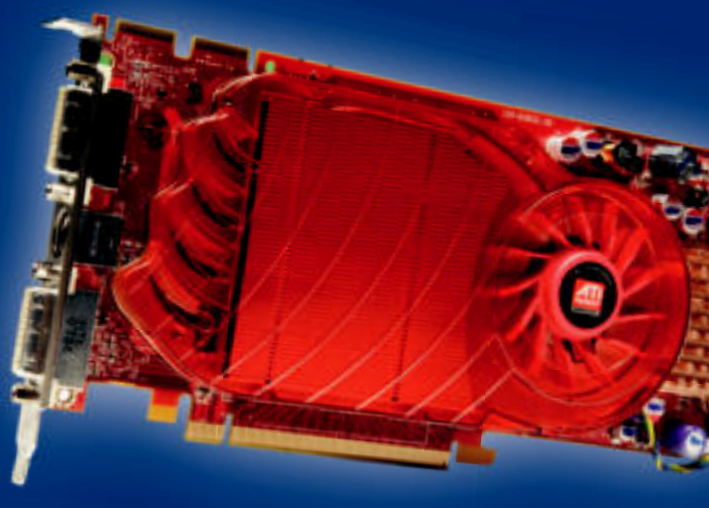
	STOCK 600MHz/900MHz	OVERCLOCKED 700MHz/1.025GHz
3DMARK06 GAME 1 (FPS)	26.4	30.5
3DMARK06 GAME 2 (FPS)	20.3	23.4
QUAKE 4 (FPS)	83.7	96.5
SUPREME COMMANDER (FPS)	29.1	31.3
FEAR (FPS)	71.0	81.0

Our test bed consisted of an Intel D975BX2 motherboard, an Intel 2.93GHz Core 2 Extreme X6800 CPU, and 2GB of Corsair DDR RAM.

KNOW YOUR VIDEOCARD'S WARRANTY

Familiarize yourself with your videocard's warranty before overclocking it—some manufacturers are more tolerant of overclocking t[redacted] others. Asus, for instance, will flatly refuse to honor a warranty on a videocard that's been overclocked after leaving the factor Diamond's senior marketing manager, Lisa Legnante, told us, "Overclocking is not promoted or recommended; however, we know that it happens."

EVGA and XFX, on the other hand, have a liberal attitude abo the matter. "EVGA will warranty cards that a customer overclocks as long as there is no physical damage to the product," said EVGA's director of technical marketing, Joe Darwin. EVGA and XFX both allow you to change the card's cooler, too—provided you don't damage the card in the process and that you retain the original cooler in case you need to return it to the manufacturer. MPC



MAXIMUM PC's GAMING AWARDS 2007

Boy howdy have the past 12 months been an eventful time for gamers! With a spate of unbelievably good titles—and a fair number of lemons—we had one helluva time deciding which games to pick and which to pan. So let's get on with the business of presenting this year's honors!

BY THE MAXIMUM PC STAFF AND NORMAN CHAN

SPECIAL ACHIEVEMENT FOR OPENING NEW DOORS IN GAMEPLAY

Portal

Within four short hours of gameplay, Portal reminded us of a time when game developers could afford to take chances. By eschewing the run-'n'-gun mechanic that's integral to first-person shooters and replacing it with a series of increasingly difficult physics-based puzzles, Valve created the first new game genre in years: the first-person puzzler. This new gameplay mechanic, combined with a subversive and irreverent sense of humor, not to mention the best baddie since Bowser, makes for an experience that appeals to newbs and hardcore gamers alike. And by selling Portal as an itsy-bitsy part of The Orange Box, Valve proved that taking a chance on something new doesn't have to be risky.

http://orange.half-life2.com, ESRB: T

THE BEST OF THE BARGAIN BIN

S.T.A.L.K.E.R.: Shadow of Chernobyl

The premise: brilliant. Mutants surround the nuked-out husk of the defunct Chernobyl power plant, where you must travel to do stuff that saves people, and… OK, we weren't paying attention to the story, but we loved the setting. Unfortunately, no combination of quality settings could get this game to run at launch, especially if you were cursed with Vista. Luckily, six months later, the game has finally been patched to the point where it will run on most rigs, making it worthy of reconsideration.

www.stalker-game.com, ESRB: M

THE BEEN THERE, DONE THAT AWARD

Unreal Tournament 3

If Unreal Tournament 3's gameplay feels strikingly similar to that of its previous iteration, it's because UT3 is pretty much the same game wrapped in a fancy new graphics engine. Not that we're complaining, since Epic arguably achieved deathmatch perfection with its 2004 classic. We're more peeved that we waited so long for UT3, only to find several of our favorite multiplayer modes missing, including Assault and Onslaught.

www.unrealtournament3.com, ESRB: M

THE HIROO ONODA "KEEPIN' THE FIGHT ALIVE" AWARD

Medal of Honor: Airborne

Like the famed Japanese soldier who did not surrender his post until 1974, Medal of Honor: Airborne desperately holds to the notion that gamers still want to play WWII-era shooters. Armed with a new parachuting gameplay mechanic and sheer force of will, MOH: Airborne defies its anachronistic shortcomings and delivers a fairly gripping shooter experience. We salute its zeal and conviction, even if less honorable gamers haven't given it the recognition it deserves.

www.ea.com/moh/airborne/index.jsp, ESRB: T

BEST MULTIPLAYER

Team Fortress 2

In a year chock-full of great multiplayer experiences—Supreme Commander, Call of Duty 4, and World of Warcraft: Burning Crusade, to name a few—the Best Multiplayer Award was a contentious subject among the editors. After much debate (and some name calling), we eventually settled on Team Fortress 2. It not only captured more of our collective multiplayer time than any other game but also brought us night after night of pure joy. TF2 delivers in every way that's important—allowing you to torch an entire scout rush with a pyro, build a turret that takes out the whole other team, or simply heal your pals so they can keep fighting. With nine very different classes, each with its own specialty and Achilles' heel, there are literally thousands of strategies to master in the game's six maps. And at no time did the limited selection of maps feel limited. Oh no. The game's sublime balance and exquisite design would have made a single map sufficient—as long as it was 2fort.

http://orange.half-life2.com, ESRB: M

WE PAID $10/MONTH FOR THIS?!

Hellgate: London

We have no problem paying monthly subscription fees for a good MMO. But Hellgate: London is neither good nor an MMO, based on the common definition of a "massively multiplayer online" game. Hellgate's gaming experience is a bitter pill—and the voluntary $10-per-month subscription model is pure poison.

Pony up, and you'll be treated to awesome features like "hardcore mode" and increased in-game storage space. Neat as it is to pay for a means to permanently die, we'd much prefer new weapons, classes, enemies, and achievement rewards and PvP—all more promises than reality at this point.

www.hellgatelondon.com, ESRB: M

THE TIMMY! AWARD FOR INSPIRATION IN GAMING

Shadowrun

We love console gaming, but it's time to face facts: The gamepad simply can't compete with a mouse and keyboard in first-person shooters. The gamepad can be precise *or* fast—but not both at the same time. Shadowrun's fast-paced combat leaves us with a deep appreciation of the, umm, handicaps our console-bound brethren must endure. Sure, we were annoyed when we out-circle-strafed our enemy and they accused us of "hax," but now we know what Fatal1ty feels like when he plays commoners. And believe us, it feels good.

www.shadowrun.com, ESRB: M

EVIL THIS GOOD LEAVES US LONGING FOR DUNGEON KEEPER 3

Overlord

Chugging through Overlord brings back fond memories of one of the greatest minion-commanding, good-smiting games ever to come to a PC: Dungeon Keeper. While you control a complete—and completely menacing—being instead of just a disembodied hand, Overlord nevertheless reinvigorates the best elements of the classic DK series: wry, dark humor; silly, smelly monsters; and oodles of replayability.

It takes time—and a big ax—to control a good land afoul with armies of diversely powered imps. Once you've rebuilt your domain and found a mistress, you'll be an evil fanboy for sure—just like all the Dungeon Keepers of yore.

www.codemasters.com/overlord, ESRB: T

THE HOBSON'S CHOICE AWARD

Call of Duty 4

Choice. As gamers, we're frequently presented with choices, both good and bad. And generally, choice is a good thing for gamers. But some games eschew the whole choice thing, instead creating intensity the old-fashioned way, with scripted events. Call of Duty 4 represents the pinnacle of choiceless gameplay, building one experience upon the previous one until you reach a climax so unbelievable, you really have to play the game to appreciate it.

www.callofduty.com, ESRB: M

*THE TOP OF THE MOUNTAIN AWARD FOR EXTREME DEWNESS

Peggle

The concept is simple, really. Peggle is digital pachinko, with crazy powerups, a trippy cast of characters, and an unrelentingly cheerful theme that would be pure saccharine if it weren't executed with such unrelenting earnestness. With hours played soaring into the thousands, we blame Peggle for more lost productivity at *Maximum PC* HQ than anything else this year. **www.popcap.com, ESRB: E**

**The Top of the Mountain Award for Extreme Dewness is in no way affiliated with Mountain Dew or Spike TV.*

WE WOULD HAVE BEEN EVEN MORE EXCITED IF IT HAD COME OUT LAST YEAR

Gears of War

We'll admit that by the time Gears of War finally arrived on the PC, we'd already beaten it twice on Insane difficulty and unlocked most of the multiplayer achievements on the Xbox 360. And can you really blame us for caving? With so much hype surrounding the visceral shooter, we crossed the PC fanboy picket lines and drank the sweet console Kool-Aid. But more steadfast PC gamers needn't fret—the PC version's extended campaign and additional multiplayer maps are a worthy consolation for your admirable resolve.

http://gearsofwar.com/, ESRB: M

WE LOVE THE SMELL OF NAPALM IN THE... WELL, ANYTIME

World in Conflict

We'll say it: There's nothing more fun than calling down airstrike after unholy airstrike while playing World in Conflict. Although "playing" is perhaps the wrong word to use. Fighting to retake the upper chunk of the United States is more a matter of "turtling" than anything else. And we can't get enough of it.

Light artillery, heavy artillery, napalm, fuel air bombs, laser-guided missiles: This game drips chaos with its massive amounts of targetable air ordnance. You can't help but smile the first time you toss a nuclear missile in a multiplayer match. We cackled with glee.

www.worldinconflict.com, ESRB: T

THE MOST ANTICIPATED GAME OF 2009

Crysis

Long development times and delayed release dates are something gamers have grown accustomed to with many of today's high-profile games. And most of the time, an extra six months or a year of waiting is a small price to pay to ensure that Triple-A titles are polished and tested for bugs. With Crysis, the problem isn't that the game was released before it was ready—the conundrum is that Crytek released a game before *our PCs* were ready. Screenshots of Crysis running at max settings taunt us like a photo of Albert Pujols—both are emasculating reminders of our inadequacy. Sure, we could enjoy Crysis's nerve-racking stealth gameplay without the next-gen graphics, but that's a disservice akin to driving a Rolls-Royce without leather seats. We'd rather wait a year until our systems are worthy enough to play the game in all its glory. **www.ea.com/crysis/, ESRB: M**

WE'D HAVE BEEN PISSED ABOUT THE CRAP PORT IF THE GAME DIDN'T SUCK SO MUCH

Guitar Hero III: Legends of Rock

Take away all of the port problems in this game—crazy system requirements, unoriginal content, lack of crossover leaderboards between the PC and Xbox 360 versions—and what do you get? A game that's just not fun.

It's the same ol' button-mashing rhythm game reskinned with a snazzier interface. Sure, you get new songs, but the difficulties have been cranked to finger-bleeding levels. And it's not even a gradual ramp up; if you make it past the game's crippling battle modes, the final chunk of five songs will rain blood on your fun parade.

www.guitarhero.com, ESRB: T

WHAT CAN BROWN DO FOR YOU?

Enemy Territory: Quake Wars

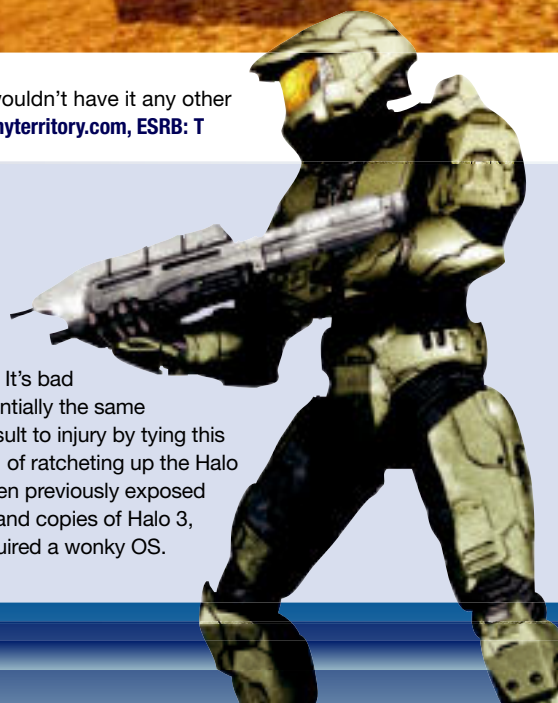
In many ways, Enemy Territory: Quake Wars is a drastic departure from the deathmatch origins of the classic id Software franchise. But even with its startling team- and objective-based design, we are comforted by the familiar earth tones that saturate almost all the game's maps. The terra palette is deeper now for sure—bronze, sienna, and hazel now blanket the tawny battlefield—but when the dust settles, brown is brown. We wouldn't have it any other way. **www.enemyterritory.com, ESRB: T**

FAIL

Halo 2 for Vista

We've come to love the occasional port from the console world—after all, Gears of War turned out OK. But releasing Halo 2 for the PC almost three years after the Xbox version shipped is silly. It's bad enough that after all that time the game was essentially the same as the original Xbox edition, but Bungie added insult to injury by tying this 3-year-old, last-gen console port to Vista. Instead of ratcheting up the Halo experience for an audience that may not have been previously exposed to it, and potentially selling some more consoles and copies of Halo 3, the publisher added a few achievements and required a wonky OS.

www.microsoft.com/games/halo2/, ESRB: M



GAME OF THE YEAR (FEBRUARY 16, 2007–AUGUST

Supreme Commander

Oh, how we love Supreme Commander. Its lightning-fast pace and emphasis on balancing economy and massive unit production makes for an entirely new kind of strategy game. Where most RTSes have focused on smaller and smaller conflicts, Supreme der is strategy writ large. Inst king 10 units to battle, you comn 0 minions on a map 10 times larg ose of any other RTS. Now that's m!

www.supremecommander.com, ESRB: E10+

BEST LYRICS IN A CLOSING CREDITS SONG

"Still Alive" from Portal

Capping off an absolutely magical game with this hilarious ditty is the win. We'll let the lyrics speak for themselves.

This was a triumph!
I'm making a note here:
"HUGE SUCCESS!!"

It's hard to overstate
my satisfaction.

Aperture Science:
We do what we must
because we can.

For the good of all of us.
Except the ones who are dead.

But there's no sense crying
over every mistake.
You just keep on trying
till you run out of cake.
And the science gets done.
And you make a neat gun
for the people who are
still alive.

I'm not even angry...
I'm being so sincere right now—
Even though you broke my heart,
and killed me.
And tore me to pieces.
And threw every piece into a fire.
As they burned it hurt because
I was so happy for you!
Now, these points of data
make a beautiful line.
And we're out of beta.

We're releasing on time!
So I'm GLaD I got burned—
Think of all the things we
learned—for the people who are
still alive.

Go ahead and leave me...
I think I'd prefer to stay inside...
Maybe you'll find someone else to help
you?
Maybe Black Mesa?
That was a joke! HA HA!! FAT CHANCE!!

Anyway this cake is great!
It's so delicious and moist!

Look at me: Still talking
when there's science to do!
When I look out there,
it makes me GLaD I'm not you.

I've experiments to run.
There is research to be done.
On the people who are still alive.
And believe me I am still alive.
I'm doing science and I'm still alive.
I feel fantastic and I'm still alive.
While you're dying I'll be still alive.
And when you're dead I will be still alive.
Still alive.
Still alive.

http://orange.half-life2.com,
ESRB: T

THE I'M A LUMBERJACK AND I'M OK AWARD

Crysis

Forget the gorgeous graphics and repetitive combat for a moment and remember your first time. It's just you and your machine gun, alone in the jungle. You tentatively lift your rifle, gently nestling its butt against your shoulder. Your finger caresses the trigger as you align the target in your sights and slowly… slowly… slowly pull the trigger. Bang. It's over.

If you're like us, we're sure you'll never forget your first time. Your first time shooting down a tree.

www.ea.com/crysis, ESRB: M

GAME OF THE YEAR

BioShock

“A man chooses, a slave obeys.” With those six words, THQ Boston opened the door to a new era of gaming. Ken Levine’s team built a gorgeous undersea world, filled it with interesting and believable characters, invites you to kill said characters using a perfectly balanced combat system, and then uses the game to do more than simply tell a tale. Unlike every other game we’ve ever played,

interactivity to explore con-

simply impossible in films

to explore objectivism and free will with the player as an active participant. By allowing the player to choose whether to save or harvest the Little Sisters, but not whether to kill Andrew Ryan at the game’s climactic moment, Levine forces players to make difficult ethical choices, while confronting them with the fallacy of free will in games.

Sadly, the final act of the game doesn’t match the brilliance of the first two parts, and the “big finish” is an offensively clichéd boss battle.

Even with its flawed third act, BioShock represents everything that we want to celebrate with our Game of the Year Award. Bravo.

http://www.2kgames.com/bioshock/, ESRB: M

MPC

Stream Media from Your PC to Your Xbox 360

A free program makes it easy to enjoy the digital video, music, and pictures residing on your computer, or even on the Internet, via any network-connected device, including an Xbox 360.

TIME 01:01 HOURS:MINUTES

It's perfectly OK to be a PC enthusiast and own an Xbox. Even *Maximum PC* editors have been known to enjoy the gaming pleasures that the console offers (in between our enjoyment of far superior PC games, natch). And now that we can use the Xbox 360 as a full-fledged media streamer, our appreciation of the device has only grown. True, the 360 has always been capable of streaming some video formats via Windows Media Connect, and the fall 2007 Xbox Dashboard Update has added full support for native DivX and Xvid streaming, but a free program called TVersity opens the console to *every* video format, as well as live Internet streams, making it a truly desirable option for even staunch PC purists.

To learn how to stream to a PS3 or Wii, go to www.maximumpc.com/article/streaming

TVersity is a stand-alone media-streaming utility designed to stream content to network-connected devices of differing protocols. The program automatically converts your content into the proper format for easy streaming on the fly. While the program is still in beta, it works reasonably well now—although it can be a bit tricky to initially configure. Follow along as we show you how to get TVersity working with your Xbox 360.

BY WILL **SMITH**

WHAT YOU NEED

- **A PC**
- **AN XBOX 360**
- **TVERSITY**
  Free, www.tversity.com
- **FFDSHOW TRYOUTS**
  Free, http://ffdshow-tryout.sourceforge.net
  OR
  CCCP
  Free, www.cccp-project.net
- **CODEC SNIPER**
  Free, http://tinyurl.com/2e674c

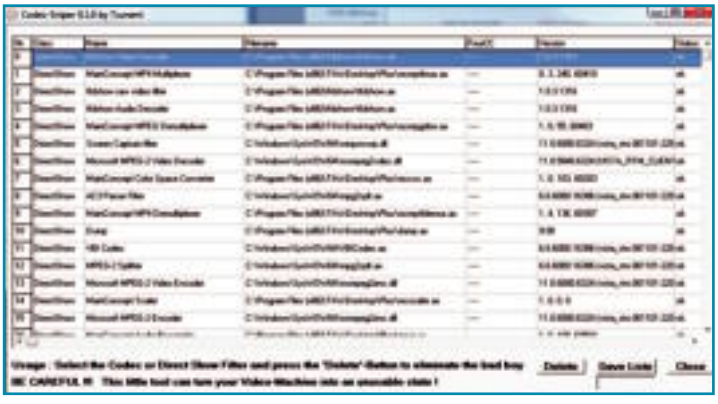
1 Clean out Your Old Codecs

The No. 1 problem for users of TVersity is the presence of incompatible or conflicting codecs—usually the result of having installed an "every codec you need" pack such as K-Lite. Regardless, you'll save yourself a lot of hassle if you just clean up your codecs before you start.

First, go to the Add/Remove Programs control panel and uninstall any codec packs, as well as utilities such as AC3Filter, Xvid, and DivX. Additionally, some video playback applications, such as Nero, also include codecs. Uninstall them as well (for the time being)—you can safely reinstall them when everything's working. Now reboot your PC and try to view a movie using a missing codec; if Windows Media Player complains that the codec is missing, you're on the right track and can continue to the next step.

If your video plays, you'll need to run Codec Sniper and manually delete the offending codecs from your system. To remove a codec, simply click it and select Delete. Delete only the codecs affiliated with your codec packs and codecs you manually installed. Deleting the wrong things here can really break your system, so be careful. You'll need to reboot for any changes made here to take effect. Once your codecs are clean and your videos cease to play, you can move to the next step.

Note: If you can't get rid of all the codecs using Codec Sniper, you may need to back up your important data and reinstall Windows.



Codec Sniper lets you see and remove any stubborn codecs.

2 Install a New Codec Pack

If you primarily want to stream MPEG-4-based media—DivX, Xvid, and the like—ffdshow is the best codec option. (If you want to stream more advanced H.264-based codecs, you'll need to use a more comprehensive codec pack. For that, we recommend CCCP. If you install CCCP, you don't need ffdshow and vice versa.)

Ffdshow is a kind of universal codec; it works with most MPEG-4–based media and also lets you decode Dolby Digital and DTS audio streams. Install the software, selecting the default options for everything, including the audio (2.0 stereo), regardless of your actual speaker config. TVersity doesn't seem to work well with the other options.

When using ffdshow, stick with the Stereo default—other audio options don't seem to work with TVersity.

After you've installed ffdshow, you should be able to once again view your MPEG-4 (DivX and Xvid, mostly) videos in Windows Media Player.

3 Install TVersity

When you install TVersity you can use most of the installer's default options, except for the TVersity Codec Pack, which you do NOT want to install. When asked if you want to install the codec pack, uncheck that box. You've already installed all the codecs you need. Vista users will see an error that the TVersity service didn't start properly, so you'll need to manually start it using the shortcut in the TVersity Start Menu folder.

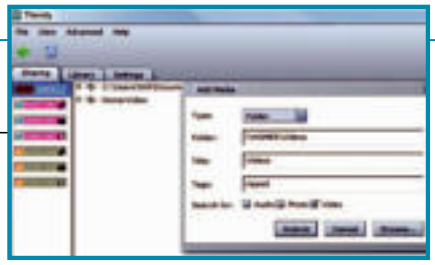
If you want to stream media that's stored on a network share—another machine, a NAS box, or a Windows Home Server—you need to configure the TVersity service (a service is an application that runs even when no one's logged in to the machine) to run as a user that has permission to access the network share. You'll need to do that even if your network share is configured to allow everyone access—services that log in to the local system account are denied access to the network. To change the login information, go to Control Panel, Administrative Tools, Services and then scroll down to the TVersity Media Server. Right-click it and go to the Log On tab. Click the This Account button and set it to use a username/password that has permission to access that network share. You'll need to restart the service after you've changed the login info; to do that, go to the General tab and click Stop and then Start.

TVersity must run as a service, with its own login and password, to access media on a network share.

4 Add Media to TVersity

This is the easy part. Open the TVersity client on the host media-streaming PC, click the big, green plus sign in the upper-left corner, and then add the folders that contain your media. It's really important to tell TVersity what types of content to search for in each folder. Your music directory, for example, likely contains tons of album art that will all be funneled to TVersity's photo section unless you uncheck the Photo box.

After you've added your media, it will take TVersity a while to search all your folders and add everything to its library. Take a 10-minute break to walk the dog or make a snack—it's best not to use TVersity while it's performing a scan.



When adding media to TVersity's library, be sure to indicate at the bottom of the screen what type of content you want streamed from the folder.

5 Stream to Your Xbox

The first thing you should do is test video playback on your 360 using its default settings. Fire up your Xbox and go to the Media blade. Select the Videos option, then press X to select your source. Now select the option labeled "TVersity on <your PC's name>:1."

If you don't see that option, you need to open a port on your firewall, or possibly disable Windows Media Connect on your server PC. Windows Media Connect, the default streaming utility for Xbox, serves a function similar to TVersity's, which can cause conflicts. To disable Connect, open up Windows Media Player on your PC and press Alt to open the menus. Go to Tools, then Options, and click the Library tab. Click Configure Sharing and then uncheck Share My Media. You may have to restart your PC to see a change.

Once your Xbox is connected to your PC, you can go to the Media/Videos section and browse to a video. Assuming that works, move on to the next step. If it doesn't, you probably need to go back and take another look at the installed codecs. If there's nothing obviously wrong on the codec front, skip ahead to Step 7 for troubleshooting instructions.

6 Improve Your Visual Quality

Two factors will determine the visual quality of your streamed media: the speed of your PC and the quality of the network connection between your PC and the Xbox. Transcoding video is tough CPU work and streaming media is network intensive. TVersity's default settings work reasonably well on an 802.11g network, but the resulting video looks terrible. You'll be hard-pressed to stream even DVD-quality video across wireless—at least until there's an 802.11n-based solution for streaming video.

To make quality adjustments, open the TVersity client and click the Settings tab. Then go to the Transcoder page. We recommend that you adjust these options one at a time, then save your settings, restart the service (Advanced menu, Restart Sharing), and test playback to ensure that one change doesn't bork your setup.

First, adjust the maximum video resolution so TVersity doesn't automatically down-convert your ripped DVDs to a lower resolution. If you're on a wired network, we recommend using the native resolution of your set. Typical resolutions are 1280x720 (720p) and 1920x1080 (1080p). If you're streaming to a standard-def set, leave TVersity at its default setting. By using the native resolution of your TV set, you'll get the best possible image quality, without forcing TVersity to resize your video on the fly. If you experience network performance problems, it's a good idea to adjust this setting to 640x480 or lower.

Now, adjust the other settings. If you're on a wireless network or have a slow CPU, your performance will suffer if you enable these settings. First, make sure the box labeled "Use DirectShow for Windows Media Encoding" is checked and the codec is set to Windows Media Video 9. This will improve performance and the quality of the video the system outputs. Next, set Optimization to Quality; set your Connection Speed to Wired (100Mbps), with the quality set to Excellent; and change the Compression setting to Minimum. Remember, your changes won't take effect until you click Save at the bottom of the page and then restart the TVersity service by going to the Advanced menu and clicking Restart Sharing.

TVersity's default settings are fine for wireless connections, but a wired connection and increased visual-quality settings offer the most satisfying results.

Now go back to the Xbox Media/Videos section and enjoy the results!

7 Troubleshoot

If you're having trouble getting streaming to work, there are three likely culprits: codec issues, bandwidth problems, or PC-performance problems. If Codec Sniper and Add/Remove programs didn't fix the first issue, back up your rig and reinstall Windows. Reinstalling Windows sucks, but troubleshooting codec problems is even worse.

Unfortunately for Xbox users with crappy networks, there isn't an easy way to copy an already converted movie to your hard drive. Microsoft simply doesn't allow this. On the other hand, if your CPU isn't up to the task of encoding in real time, you can help that by increasing the hard drive space available to cache already-converted movies. To do that, go to Settings in TVersity and increase the amount of disk space to give more space to converted files. Then start viewing a movie. It may fail at first, but if you give it time to build up a buffer, the video should play. MPC

Ask the Doctor

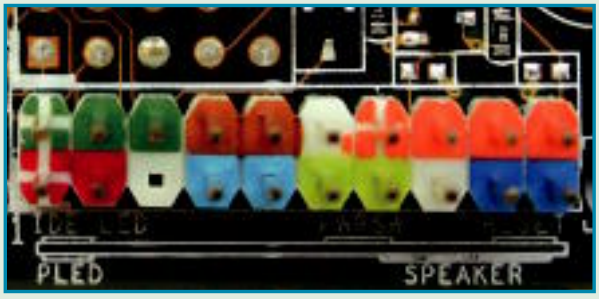
Diagnosing and curing your PC problems

NO START? NO PROBLEM!

I am a first-time PC builder and started my project a year ago after I purchased your guide to building a dream PC. I have been collecting my parts over the past year and finally got a chance to piece them all together. The problem? My computer won't start! I get a green LED on the motherboard when I turn on the power supply, but nothing happens when I push the case's power button. Nothing starts: no case fans, no power-supply fan, no CPU, no videocards. What's going on?

—Adam

It's great that you're building your own rig, but you made a classic mistake. The warranty on components tends to be rather short, so you should always test your parts immediately. The Doctor understands that your situation didn't let you test your gear right away, but keep this in mind for next time.



Front-panel connectors are often mislabeled or don't color-match the appropriate wire, so refer to your motherboard manual to determine which connector is which.

Now to your problem. The Doctor's first suggestion, especially for rookies, is to ensure that you've connected the power switch correctly. Get out your motherboard manual and double-check that the wires for the switch are connected to the corresponding pins on the mobo. If the machine still doesn't start, try directly shorting the two pins to POST the board—use the tip of a screwdriver to temporarily bridge the two. This will eliminate a bad power switch or wire on the case as a culprit. Also, make sure that the ATX12V and 24-pin main power connector are firmly inserted.

If you still don't have any luck, try removing devices from the board one by one (make sure you power down the PSU first). After each removal, try restarting the machine. You might even have to unplug the hard-drive power cables from the board. Sometimes a pin in the power connector will get shorted against another, which can cause the PSU to immediately turn off.

30FPS SUX

When running two 7900 GS cards in SLI, an AMD 4200+ CPU, a gig of RAM, and a Western Digital Raptor drive on a Foxconn NF4SK8AA motherboard, I should get jaw-dropping performance, right? I'm getting only 30fps in Need for Speed: Carbon with visual qualities set to high at a resolution of 1440x900. That doesn't seem right! Lowering the qualities to low nets me 200-plus frame rates; medium gets me 50fps to 70fps. And at maximum? The car teleports. What's going on?

—Eric Chen

Getting "only" 30 frames per second with the rig at the resolution you describe doesn't sound all that unusual. The 7900 GS was introduced more than 18 months ago, and the Doctor has never known SLI (or CrossFire either, for that matter) to double any PC's performance.

Having said that, you should make sure you're using the latest drivers and that the GeForce SLI profile is set to use SLI (one of the options is to use a single GPU even when you have an SLI config). You might also experiment with the rendering options in the profile to see if one delivers better performance than the others.

ONE SLI, TWO DIFFERENT CARDS?

Several months ago you were good enough to publish my question about SLI compatibility without actually answering the question, so let me rephrase. Whenever you talk about an SLI setup, you always describe a pair of identical cards in a fairly pricey system, which is certainly interesting to most readers of ***Maximum PC****. But darker forces lurk in the readership—we're cheap. Sure, we'll build an SLI system but by starting with one card and adding a less-expensive card later. The cards will be compatible, but probably not identical. This will give us a performance hit, so my question is: How much of a hit?*

—Edward Cotter

Your question has the Doc scratching his head, Edward, but he'll attempt to answer it—or at least what he thinks is your question. First, when you buy a videocard for the SLI rig you're building, buy the best single card you can afford at the time—it's better to get good performance today and better performance tomorrow than to leave yourself without an affordable upgrade path. As for your comment that you'll buy a "compatible but probably not identical" card later, it doesn't matter what brand the two cards are, as long as they both use the same GPU.

Remember, you can't harness an 8800 GT to an 8800 GTS, if that's what you're inferring. And if you buy a second card that has a lower clock speed than your original, both cards (when SLI'd together) will run at the lower clock speed. That said, it's in your best interest to pick a second card that's identical to the first, and if not, at least go for one that shares the same specifications as the first.

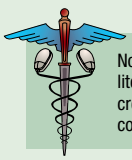
GEEK SQUAD GENERALITIES

The last time I went to Best Buy, I was looking to purchase a new laptop. I asked a salesperson if I could split my hard drive and put XP on it. She talked to the Geek Squad and they said that it would be almost impossible to do that. The Toshiba laptop I was asking about was a top-end model. She also said that most laptops were like that and, thus, couldn't run XP without a lot of trouble. Are they right?

—Ken Payne

The Doctor gets really annoyed with people who provide answers without even the simplest of explanations. The Geek Squad's assessment is most likely correct, but they should have told you why. It's highly probable that Toshiba doesn't provide a Windows XP display driver for the notebook in question, and it won't allow the GPU manufacturer (AMD or Nvidia, most likely) to do so, either.

The reasoning behind this restriction is that notebook manufacturers typically customize the display driver to support hot-key functions, power-management features, and suspend/resume behavior. The reference drivers that Nvidia and AMD develop don't support these features, so they're incompatible. MPC



Nope. Nothing. You get nothing this month—no witty banter, no allusion to literature or songs. Zilch. The winter season has sapped the Doctor of his creativity, but thankfully, it hasn't destroyed his resolve for answering your computer-related questions. Shoot those over to doctor@maximumpc.com.

White Paper: PC Recycling

It's finally time to put that old rig down, but what happens to your PC in the afterlife?

BY ZACK **STERN**

Very few of the components in your PC are biodegradable—and many are toxic—so dumping your old gear in a landfill is not only foolish but illegal. Besides, so many places will accept electronic waste these days that's there's really no excuse for *not* recycling your old rig.

Once your PC shuffles off to that great Start Menu in the sky, technicians can transplant its viable parts into ailing in-use systems. But if it's too rickety for that procedure, recyclers can reincarnate it into an entirely new product. We find inner peace imagining our otherwise useless PII coming back as a flower pot or a pair of running shoes.

REUSE

Whether you drop off your old PC at your local landfill's e-waste center or donate it to a charity such as Goodwill Industries, there's a good chance it will wind up at a large domestic recycler. These recyclers facilitate and manage the entire process, even if they're not equipped to handle each and every step. First, the organization logs the PC into its tracking system; next, employees assess the PC's quality as a whole as well as its individual parts.

If the system functions properly and is not wholly obsolete—the line is typically drawn at Pentium 3–class machines—it can be donated or even resold intact. If it doesn't meet those benchmarks, components (typically RAM, optical drives, and processors) that meet the company's quality standards are extracted and delivered to wholesalers or refurbishers. In fact, nearly everything can be salvaged. Some vendors even buy undamaged cases and other cosmetic parts.

Although we recommend that you purge the data from any hard drive you discard, some recycling firms, such as the Texas-based TechTurn, will do it for you: "Our test department performs a functional test on the equipment," explains William Long, TechTurn's vice president of strategic partners, "and then erases all of the data from the hard drive and any other electronic media… in accordance with U.S. Department of Defense standards." TechTurn accomplishes this by overwriting each sector with either random data or zeroes several times. If a bad sector prevents a rewrite, the recycler will typically physically destroy the unit.

REDUCE

The actual recycling begins with a tear down and general parts sorting. Some recyclers manually divide the components into numerous streams, organized by part (hard drive, optical drive, keyboard) or commodity (plastic, copper, aluminum, steel); commodities are then passed on to specialty recyclers.

Hewlett-Packard recycles some PCs by removing hazardous materials, such as batteries, and then dumping the entire machine into a powerful shredder. In other cases, the company will remove printed circuit boards and then shred the enclosure. Either way, the recyclable materials are automatically sorted as they move down the disassembly line.

The shredder mulches the computers into successively smaller pieces until they're coin size. As they pass over an 8mm wire mesh, soft metals such as gold, silver, and copper fall through. Magnets lift steel out of the pile, and the remaining rubble is dumped onto another conveyor belt and zapped with electricity. This action assigns a positive charge to any aluminum material in the debris. Just before the material reaches the end of the belt, a second positive charge ripples through it, which repels the aluminum bits and flings them into another sorting bin. At this point, the only material left on the belt is non-conducting plastic, which is dumped into a final collection bin.

Shredding is a less-common recycling technique because the process tends to eject particles that workers might inhale. But HP's Tatyana Kjellberg, consumer program manager for the company's Product Take Back service, tells us the company's employees are well protected: "There are gloves and glasses at all times. When working close to the shredder and the metal-separating plant, they wear hard hats, just in case. [In] the shredding and separating section, there's a huge filter attached to all the different separating sections. If there's any dust or particles floating around, it pulls them in like a big vacuum." Kjellberg maintains that HP's air-filtration system is so extensive that the company's employees don't need to wear respirators or even masks.

A massive shredder reduces aging electronics to quarter-size chunks at Hewlett-Packard's recycling center in Roseville, California.

RECYCLE

Once the primary recycler has extracted commodities such as aluminum and steel, it typically ships them to recyclers that specialize in the respective materials. CRTs, which can harbor considerable amounts of lead, are usually delivered intact to a company with expertise at separating that hazardous material from glass, plastic, and metal. Precious metals and printed circuit boards are often sent to a smelter for separation.

As these materials are slowly heated, each base element liquefies at a different temperature. The liquefied material is then drained off and the process is repeated until everything has been recovered. Since the smelting process can release hazardous materials into the environment, special filters and scrubbers are deployed to trap the potential pollutants.

Where does all this stuff ultimately wind up? Recovered plastic can be used in the manufacture of everything from shoes and roof tiles to park benches and storage bins. Metals recovered from old batteries during the smelting process can be recycled into fresh batteries. And the fiberglass recovered from printed circuit boards is typically used in the construction industry for concrete fill.

REVISE AND REDESIGN

The representatives of several companies we interviewed for this story told us that, in theory, they can recycle an entire PC in a closed loop, turning every used material into something new. But they also admitted that reaching that level isn't always practical. Most companies manage to reuse 90 to 98 percent of the material in a personal computer. It's often too expensive for a recycler not equipped with a smelter or a shredder, for example, to separate metal rivets embedded in plastic or thin copper wire from its insulating jacket.

That doesn't necessarily mean the leftover material is bound for a landfill. If it can be incinerated safely, it can be used as fuel for generating electricity, recovering at least some of the energy required to produce it in the first place.

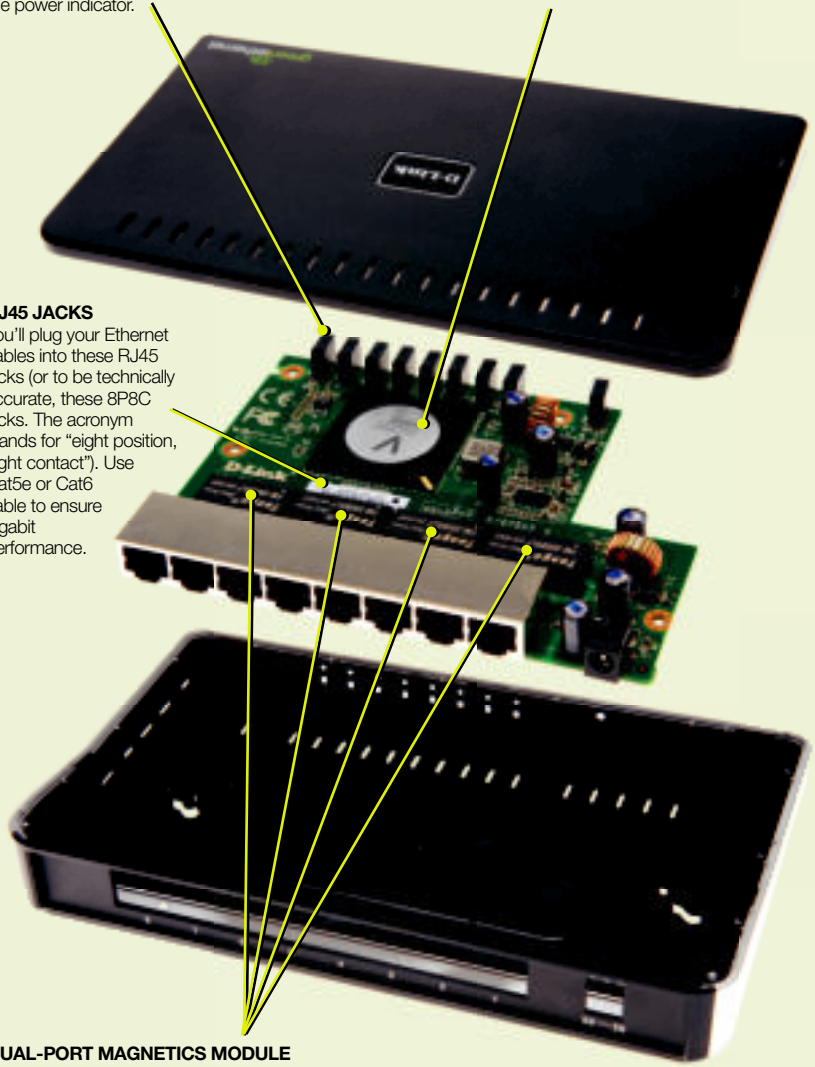
High-profile recyclers maintain detailed paper trails to keep track of the parts they take in and process, often hiring outside consultants, such as Environmental Resources Management, to act as outside auditors. Above-board recyclers avoid shipping recyclables to countries with lax environmental protections, and none of the companies we spoke to ships waste across borders. But dark corners remain in the recycling industry: "There will always be people down the food chain," said ERM partner Kristyn Malina Rankin, "who will not do the right thing." MPC

Gigabit Ethernet Switch

An Ethernet switch is the most vital component in your wired local area network (LAN), aside from your DSL cable modem. We took apart this D-Link DGS-2208 to see what's inside.

STATUS LEDS
Eight of these LEDs glow to indicate a live connection: Amber indicates the link is operating at 100Mb/s; green indicates a gigabit connection. The LED off by itself is the power indicator.

8-PORT GIGABIT ETHERNET SWITCH
As you probably guessed based on its sheer size, this chip is the most important component in the switch. The Vitesse SparX-G8 in this model integrates eight gigabit Ethernet ports, eight tri-speed (10/100/1000Mb/s) copper transceivers, and an 8051 CPU.



RJ45 JACKS
You'll plug your Ethernet cables into these RJ45 jacks (or to be technically accurate, these 8P8C jacks. The acronym stands for "eight position, eight contact"). Use Cat5e or Cat6 cable to ensure gigabit performance.

DUAL-PORT MAGNETICS MODULE
Four magnetics modules sit behind the RJ45 jacks and serve as the interface between the jacks and the switch. Because these are dual-port modules, each one supports two Ethernet ports.

Any requests? What hardware—new or old—would you like to see go under *Maximum PC's* autopsy knife? Email your suggestions to **input@maximumpc.com.**

GORDON **MAH UNG**

Wants to Kill ATX

And says it's time to start looking beyond legacy formfactors

Would you use a ball mouse? A VL-Bus graphics card? A Socket 7 board? Then why the hell are enthusiasts still embracing the 13-year-old ATX formfactor? It's time we started thinking about moving beyond ATX.

Today, we're running quad-core boxes with two or more GPUs in a formfactor created when people used serial and parallel ports and the Pentium was the hot chip in town. In the near future, USB 3 will appear on motherboards in the south-bridge chips. To route the ports, motherboard vendors must run traces all the way from the south bridge to the rear I/O shield. You might be able to do this with USB 3 data rates on a four-layer board, but can it be done with USB 5? If it requires more layers, it'll add to the cost of the board.

Of course, Intel tried to fix these problems with its BTX formfactor, which cratered because of resistance from case-makers, a new emphasis on cooler CPUs, and complete resistance from AMD. But if I were hardware dictator for a day, I'd propose a new formfactor called GTX (Gordon TX) that mandates:

- A minimum motherboard stand-off height, so wires can be routed safely and easily *under* the motherboard
- RAM and expansion slots that are parallel to air flow in the case
- A larger board area and I/O section to accommodate the dizzying array of connectors a modern power user needs
- Standardized front-panel connectors for reset, power, and LEDs

The failed BTX formfactor included many forward-thinking features.

- Two more expansion slots. The seven in ATX aren't enough with the multi-GPU machines we're building
- Less distance between the south-bridge and north-bridge chips
- A CPU cooling scheme that accounts for liquid cooling or venting from an area other than the front of the machine. While we're at it, let's build in more cooling for the GPU

This probably sounds crazy because the push is for smaller, rather than larger, PCs, but I say it's time. Average people are moving toward smaller machines or notebook PCs. Full-tower ATX boxes are increasingly focused on the workstation market; we really shouldn't be handcuffed by formfactors designed to appeal to the masses.

Will Smith

Experiments with 64-bit Vista

Real-world testing yields surprising results

Listeners to the No BS podcast know that I've spent the last two months experimenting with 64-bit Vista on a system with more than 2GB of memory. That's right, I took my trusty XP/Vista x86 dual boot and borked the entire thing by adding a couple gigs of memory and installing an OS that's still facing some serious growing pains.

The first problem was stability—the machine crashed at the drop of a hat and Windows rapidly became corrupted. After reinstalling Windows for the *n*th time, I finally installed components one at a time and was able to determine that my Creative X-Fi card was the culprit. With the X-Fi removed, and onboard sound enabled, everything was much better, or so I thought.

Next up was suspend. While the suspend functionality in 32-bit Vista works flawlessly, I experienced crashes when suspending and resuming in 64-bit mode. I first theorized that the problem was due to my memory configuration. I'd populated all four banks on my motherboard to reach 4GB of RAM, which can cause stability problems. To counter that, I popped two 2GB Patriot DIMMs from the Lab into the test machine—to no avail. The machine still frequently crashes on suspend and resume operations.

What's the upshot? After at least 10 complete reinstalls of Vista, a switch to onboard sound, a new motherboard or two, and the sacrifice of several chickens, I still can't suspend or sync my iPod (one of the many incompatible operations I've tried). I'm giving up, at least for now. While performance felt moderately better than with 32-bit Vista, especially on apps that can use more than 2GB of memory, the benchmarks didn't show it, and frankly 64-bit isn't worth the hassle.

How We Test

Real-world benchmarks. Real-world results

We use the following multithreaded apps to test a PC's performance relative to our zero-point test bed:

Adobe Premiere Pro CS3: We take HD video shot on a pro Sony camera and output the edited results to a Blu-ray-friendly MPEG-2 file format. This test favors clock speed and likes quad-core CPUs.
Adobe Photoshop CS3: A gazillion Photoshop filters are applied to a RAW digital-image format.
Photodex ProShow Producer: This pro-level photo slide-show application spits out a hi-def MPEG-2 file format and favors multicore CPUs.
Mainconcept Reference: We take an HD-resolution MPEG-2 file and convert it to H.264/AVC with this multithreaded encoder. Used by advanced amateurs and professionals, this encoder likes fast, efficient multicore procs.
FEAR: Our DX9 gaming test runs at 1600x1200 with soft shadows and is a good approximation of gaming performance for slightly older titles.
Quake 4: Based on the Doom 3 engine, this OpenGL shooter is optimized for dual-core CPUs, and although older, it still reveals weaknesses in OpenGL drivers.

There's More Maximum PC Online!

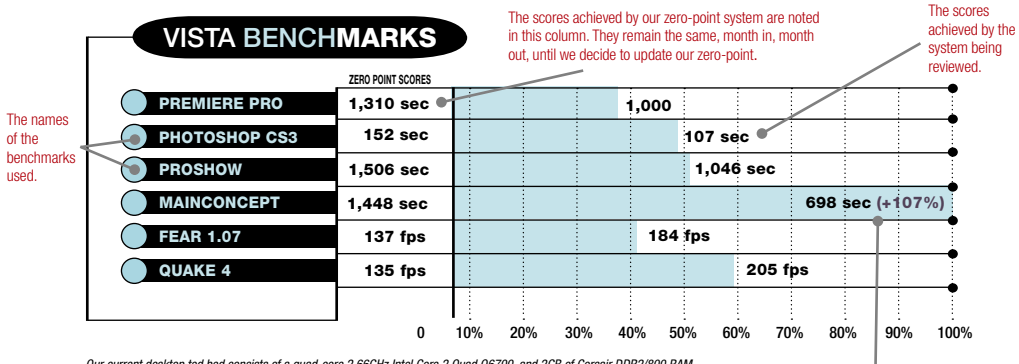
For web-exclusive hardware, software, and game reviews, head to **www.maximumpc.com/exclusive** today. Here are just a few of the many reviews you'll find online at MaximumPC.com.

- OCZ 32GB ATV USB flash drive
- Wolfking Trooper gaming keyboard
- MemoriesOnTV 4.0
- ViewSonic DimaniDuo NX2232w LCD/TV
- SimpleTech Duo Pro backup drive
- Enermax Jazz Drive enclosure
- Logitech Z-Cinema
- Vudu moviebox
- Vuzix iWear
- Etymotic Edge GX400

PLUS the awesome No BS Podcast!

How to Read Our Benchmark Chart

Maximum PC's test beds double as zero-point systems, against which all review systems are compared. Here's how to read our benchmark chart.



The names of the benchmarks used.

The scores achieved by our zero-point system are noted in this column. They remain the same, month in, month out, until we decide to update our zero-point.

The scores achieved by the system being reviewed.

Our current desktop ted bed consists of a quad-core 2.66GHz Intel Core 2 Quad Q6700, and 2GB of Corsair DDR2/800 RAM on an EVGA 680 SLI motherboard. We are running two EVGA GeForce 8800 GTX cards in SLI mode, Western Digital 150GB Raptor and 500GB Caviar hard drives, LG GGC-H20L, Sound Blaster X-Fi, and PC Power and Cooling Silencer 750 Quad. OS is Windows Vista Ultimate

Every month we remind readers of our key zero-point components.

The bar graph indicates how much faster the review system performed in respect to the zero-point system. If a system exceeds the zero-point performance by more than 100 percent, the graph will show a full-width bar and a plus sign.

BEST OF THE BEST

Our monthly category-by-category list of our favorite products. New products are in red.

High-end videocard
XFX GeForce 8800 Ultra

Midrange videocard
EVGA e-GeForce 8800GT SSC 512MB

Soundcard
Creative Labs X-Fi XtremeGamer Fatal1ty Pro Series

Hard drive
Seagate 1TB Barracuda 7200.11

External backup drive
Seagate FreeAgent Pro 750GB

High-def burner
LG GGW-H20L

DVD burner
Samsung SH-203

High-end LCD monitor
Gateway XHD3000

Budget LCD monitor
Samsung SyncMaster 206BW

Socket AM2 Athlon 64 mobo
Gigabyte GA-M59SLI-S5

Socket 775 Core 2 Duo mobo
Asus P5E3 Deluxe WiFi-AP@n

HD-based MP3 player
Apple iPod

Flash-based MP3 player
Toshiba Gigabeat MET-400

5.1 speakers
Logitech Z5500
The classic Z5500 takes the lead with the demise of Creative's S750.

2.0 speakers
Audioengine 5

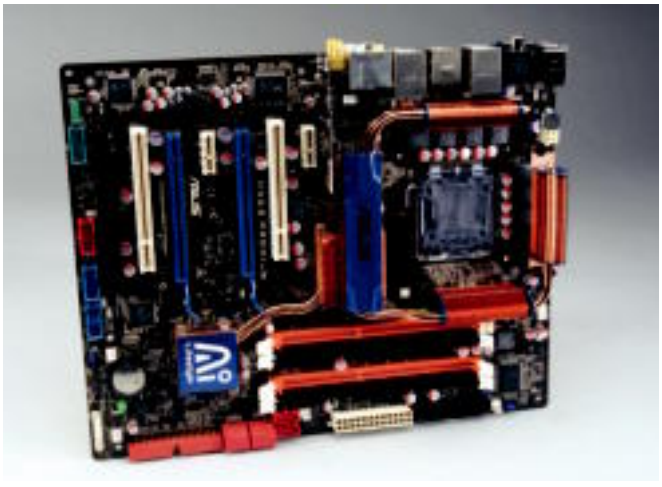
Midtower case
Antec Nine Hundred

Full-tower case
Gigabyte 3D Mercury

Games we are playing
Battlefield 2, Crysis, Call of Duty 4: Modern Warfare, Peggle, Team Fortress 2, Portal

Next-Gen Motherboard Showdown!

Harvesting a crop of winter chipsets, XFX and Asus spring two new performance motherboards to house your shiny, new quad core



Asus's P5E3 Premium gives you support for both today's and tomorrow's Core 2 CPUs.

You have your eyes on a shiny, new Intel 45nm Penryn CPU, but your current motherboard has left you stranded. What should you do? XFX and Asus hope to grab your attention with boards that include Penryn and PCI Express 2.0 support. To find out which board and chipset is better, we gave each a lirpa, sat back, and started singing: "Dah, dah, dah, dah, dah, dah, daaaah, dah!"

—GORDON MAH UNG

ASUS P5E3 PREMIUM

Motherboard naming conventions have never been easy to follow, but Asus threw us for a loop with its P5E3 Premium board. Is it an even better version of the stellar P5E3 Deluxe that we reviewed in January? Nope. The board actually features Intel's newest enthusiast x48 chipset, which is, umm, 10 more than the x38 used in the P5E Deluxe board.

Besides the chipsets, you'd be hard-pressed to tell the difference between the two boards if they were laid side by side. Like the Deluxe, the Premium has integrated 802.11n wireless capable of running in access-point mode. Both feature a beefy heat pipe, PCI Express 2.0, an Analog Devices audio component, eSATA ports, and spiffy I/O shields. And like the Deluxe, the Premium also sports three physical x16 PCI-E slots, two of which run at x16 PCI-E 2.0 data rates while the third runs at x4 PCI-E data rates. For hardcore gamers, SLI still isn't supported since Nvidia is limiting its multi-GPUs to its own chipsets. You can run CrossFire mode, but AMD graphics aren't anybody's first pick for gaming right now.

Also aboard is the Express Gate feature. It lets you boot into a mini OS that sits in a bit of flash RAM on the motherboard. From this pre-boot environment, you can browse the Internet or access Skype without having to start your OS. It's an interesting concept, but you can't save files from the browser. Such capability would make the Express Gate a great emergency tool should your OS get trashed and you need to access the Internet to search for a fix or download a driver or utility.

If the only change is the addition of the x48 chipset, should you upgrade from a P35 or x38? Not necessarily. The key change from the x38 to the x48 is official support for Intel's upcoming 1,600MHz front-side bus CPUs; the x48 also adds improved Xtreme Memory Profile support, so boards can auto-overclock. Other internal tweaks give it better memory-ratio settings and better voltage control over DDR3 RAM. We must point out, however, that the x38 is perfectly stable on a 1,600MHz front-side bus and many other chipsets are as well. Like a Vulcan, though, Intel must do everything by the book. If it's going to have 1,600MHz CPUs, it's damn well going to have a chipset fully validated for it too.

Coming off the high of the x38-based P5E3 Deluxe board, we thought the x48-based P5E3 Premium would be just as impressive. But this board was just plain finicky out of the box, and we had to go through several BIOS requests from Asus to get one that would let us make basic BIOS setting changes. While the Deluxe version excelled against a competing 680i board in January, the Premium couldn't outrun our XFX Nforce 780i SLI board here. The only numbers worth mentioning are surprisingly subpar disk I/O numbers and a performance edge in FEAR.

The Premium's one serious advantage over Nvidia's 780i is still pretty valuable though: validated 1,600MHz front-side bus support, which makes it a far safer bet for anyone who places CPU performance above running two GeForce cards in SLI. But who knows, maybe AMD will do Intel

ASUS P5E3 PREMIUM

PEPPERMINT
Official 1,600FSB support, eSATA, and 802.11n for free!

PEPPER SPRAY
Flaky BIOS problems and no SLI.

8

$360, www.asus.com

SPECS

	ASUS P5E3 PREMIUM WIFI-AP@N EDITION	XFX NFORCE 780I SLI
CPU SUPPORT	Intel 800, 1,066, 1333, 1,600	Intel 800, 1,066, 1,333
RAM SUPPORT	DDR3/1066 – DDR3/1800	DDR2
MAXIMUM RAM	8GB	8GB
AUDIO	Analog Devices 1988 with optical and coax SPDIF	Realtek ALC88S with optical SPDIF
USB PORTS/HEADERS	6/2	6/2
SATA/eSATA	6 SATA 3Gb, 2 eSATA	6 SATA 3Gb
RAID OPTIONS	RAID 0, 1, 5, 10, Matrix	RAID 0, 1, 5, 0+1
NETWORKING	2 Gigabit, 802.11n	2 Gigabit
FIREWIRE	FireWire 400	FireWire 400

a favor one day by introducing GPUs that people will use.

XFX NFORCE 780I SLI

We knew something was up when Nvidia officials were light on details concerning its 780i chipset during a recent press briefing. Normally quite happy to toot its hardware horn, Nvidia practically skipped the PowerPoint slide on the chipset.

Why? Like Intel's x48, the 780i isn't really that new. In fact, those familiar with the 680i are well acquainted with the 780i, which is pretty much a 680i with an extra chip (interestingly named the Nforce 200) thrown in to add PCI-E 2.0 support and a full x16 tri-SLI mode.

Despite this, the XFX Nforce780i SLI is still worth taking a gander at. In the hardware department, it has some nice enthusiast touches, such as a POST LED and surface-mounted reset and power switches, but it's pretty bare-bones next to the Asus board. While we can see not including 802.11n or the wacky pre-boot stuff in the XFX 780i, where are the eSATA ports?

In the I/O arena, the XFX 780i board features three physical x16 slots. Two slots operate at full x16 PCI-E 2.0 data rates while the third runs at x16 PCI-E 1.0 rates. When running tri-SLI mode, the two PCI-E 2.0 slots are actually slaved to the nForce 200 chip, which plumbs directly into the north bridge, while the third x16 PCI-E is routed through the south bridge. There's been some criticism of this design, which is a bit like going from your kitchen to the living room by crawling though the bathroom window and cutting across the yard. Can you truly synchronize three GPUs if one has to take such a circuitous route? Nvidia says it's not an issue because the cards actually do most of their talking across the big SLI bridge that's clipped to the top of the cards. The board includes bridges for tri- and dual-SLI configurations.

Take the old 680i, throw in PCI-E 2.0 support, and you get XFX's nForce 780 SLI board.

Also supported out of the box in the 780i is Nvidia's Enthusiast System Architecture, which lets a PC talk to new ESA-enabled smart components such as power supplies, water coolers, and case enclosures. We've seen early ESA implementations, and we like it so far.

What is truly a differentiator between the 680i and the 780i is support for Intel's 45nm Penryn CPUs. Although Nvidia officials initially indicated that they expected quad-core Penryns to work on 680i boards, to the chagrin of enthusiasts everywhere, they were wrong. Due to limitations with existing board designs, the current 680i inventories won't work with Penryn quad cores, such as the Core 2 Extreme QX9650 or the upcoming budget quad Penryns. For those, you need a board like the XFX 780i.

You're not completely CPU-safe though. While the 780i supports 1,333MHz Penryn CPUs, it isn't clear if it will work with the upcoming *1,600MHz* FSB Core 2 Extreme QX9770 CPU. Nvidia has been cagey concerning this issue, saying that it can't comment on compatibility until Intel releases a shipping part. In our tests, however, it's a no go. Using a 3.2GHz/1,600FSB Core 2 QX9770, the XFX 780i board wouldn't work even with the CPU and FSB downclocked to a 1,333MHz FSB. Nvidia has a point that it's still waiting for final silicon to finish validating it, but come on. Aren't Nvidia and Intel even communicating here? We must note that the QX9770 worked fine with the Asus X48 board.

This is perhaps the most troubling aspect of the XFX 780i board, and the entire chipset lineup. Add that to talk of a soon-to-be-released 790i chipset with DDR3 support and you have a chipset and board that have fairly limited appeal. Although performance was quite good and it erases the performance gap we saw in our January showdown between the x38 and 680i, we're pretty damned worried that it'll be obsolete faster than you can say 45 nanometer.

XFX NFORCE 780I SLI

WATERMELON
ESA, SLI, and a far simpler BIOS than the Asus board.

WINTER MELON
No eSATA ports and questionable 1,600 FSB support.

7

$300, www.xfxforce.com

BENCHMARKS

	P5E PREMIUM WIFI-AP @N EDITION	NFORCE 780I SLI
VALVE PARTICLE TEST (FPS)	109	109
FEAR (FPS)	**375**	346
QUAKE 4 (FPS)	224.5	**227.5**
3DMARK05	**19,436**	19,325
3DMARK06 OVERALL	**14,093**	13,982
3DMARK06 CPU	**5,280**	5,253
PCMARK05 OVERALL	10,185	**10,526**
PCMARK05 CPU	**10,764**	10,745
PCMARK05 MEMORY	6,841	**6,981**
PCMARK05 GRAPHICS	**13,909**	13,419
PCMARK05 HDD	6,973	**7,665**
SCIENCEMARK 2.0 OVERALL	**1,866**	1,830
CINEBENCH 10	**12,048**	12,028
MAINCONCEPT (MIN:SEC)	**25:06**	27:33

Best scores are bolded. We used a 2.66GHz Core 2 Quad Q6700 @ 3.33GHz, an EVGA 8800 GTX graphics card, a WD Raptor 150GB 10K drive, 2GB of DDR2/1066, and 2GB of DDR3/1333.

Asus EN8800 GTS 512MB

Faster than midrange, slower than high end

Nvidia's introduction of the GeForce 8800 GT left us wondering what would happen to the slightly older 8800 GTS—the model coupled with a 320MB frame buffer more so than the one paired with 640MB of memory. Nvidia cleared it all up by introducing the GeForce 8800 GTS, which has a 512MB frame buffer. Confused? We can't blame you.

Nvidia's branding strategy is puzzling because this graphics processor is quite different from the other two 8800 GTS cards, which were based on Nvidia's G80 architecture used in the higher-end 8800 GTX, and the even faster 8800 Ultra; this one is based on the G92 featured in the aforementioned 8800 GT.

BENCHMARKS

	ASUS EN8800 GTS 512	NVIDIA GEFORCE 8800 GT
WINDOWS XP		
3DMARK06 GAME 1 (FPS)	**32.0**	26.3
3DMARK06 GAME 2 (FPS)	**24.1**	20.4
CRYSIS (DX9) (FPS)	**34.9**	33.8
UNREAL TOURNAMENT 3 (FPS)	**84.2**	73.6
WINDOWS VISTA		
3DMARK06 GAME 1 (FPS)	**30.3**	24.8
3DMARK06 GAME 2 (FPS)	**23.4**	19.8
CRYSIS (DX10) (FPS)	**28.0**	21.3
UNREAL TOURNAMENT 3 (FPS)	**73.5**	67.5

Best scores are bolded. AMD-based cards tested with an Intel D975BX2 motherboard; Nvidia-based cards tested with an EVGA 680i SLI motherboard. Intel 2.93GHz Core 2 Extreme X6800 CPUs and 2GB of Corsair DDR RAM used in both scenarios. Benchmarks performed at 1920x1200 resolution on Viewsonic VP2330wb monitors.

As such, the 8800 GTS 512 includes three important features you won't find in its older cousins: support for PCI Express 2.0, integrated PureVideo HD circuitry (for offloading all high-definition video decoding from the host CPU), and HDCP copy-protection support on both its DVI links (which enables large-screen monitors to display commercial HD video at their native resolution).

If Nvidia's GeForce 8800 GT was a grand slam, the G92-based 8800 GTS is at least a home run.

On the other hand, this GPU (like the 8800 GT) is outfitted with a narrower 256-bit memory interface, compared to the 320-bit interface in the original 8800 GTS. And like boards based on the 8800 GT, boards based on the 8800 GTS 512 are equipped with only one SLI connector—there won't be any three- or four-way GPU action with this card.

The only other features that separate this from the cheaper 8800 GT are clock speeds (Asus's EN8800 GTS runs its core and GDDR3 memory at a stock 650- and 970MHz, respectively), the number of stream processors (128 versus the GT's 112), and the presence of a dual-slot cooler. This is a terrific card, but with street prices for the 8800 GT and AMD's Radeon HD 3870 hovering at $285 and $250, respectively, we just can't elevate it to Kick Ass territory.

—MICHAEL BROWN

ASUS EN8800 GTS **9**

$365, www.asus.com

HIS Radeon HD 3870

Sometimes second place is good enough

This is the second Radeon HD 3870 we've reviewed, and we like it just as much as the first. It doesn't outrun Nvidia's G92-based 8800 GTS 512 (reviewed above), but it's a great value among midrange videocards.

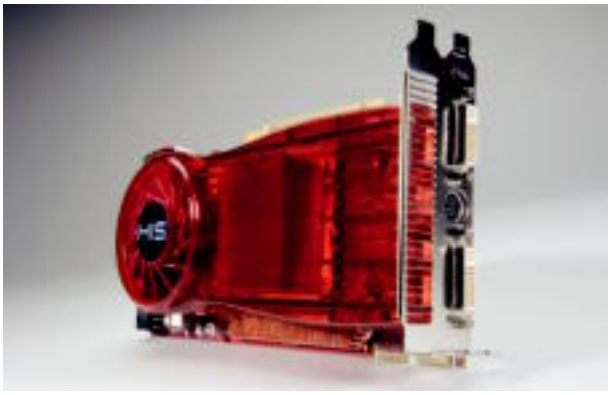
This model is based strictly on AMD's reference design, so it doesn't feature HIS's IceQ 3 cooling technology. But the fan on the double-slot cooler is plenty quiet for any application, save deployment in a home-theater environment. This is made possible by the die shrink and 55nm manufacturing process AMD uses to build the Radeon HD 3870, which consumes much less power and generates considerably less heat than its predecessors.

BENCHMARKS

	HIS RADEON HD 3870	NVIDIA GEFORCE 8800 GT
WINDOWS XP		
3DMARK06 GAME 1 (FPS)	23.1	**26.3**
3DMARK06 GAME 2 (FPS)	20.1	**20.4**
CRYSIS (DX9) (FPS)	31.3	**33.8**
UNREAL TOURNAMENT 3 (FPS)	55.2	**73.6**
WINDOWS VISTA		
3DMARK06 GAME 1 (FPS)	22.8	**24.8**
3DMARK06 GAME 2 (FPS)	**20.6**	19.8
CRYSIS (DX10) (FPS)	**26.0**	21.3
UNREAL TOURNAMENT 3 (FPS)	50.6	**67.5**

Best scores are bolded. AMD-based cards tested with an Intel D975BX2 motherboard; Nvidia-based cards tested with an EVGA 680i SLI motherboard. Intel 2.93GHz Core 2 Extreme X6800 CPUs and 2GB of Corsair DDR RAM used in both scenarios. Benchmarks performed at 1920x1200 resolution on Viewsonic VP2330wb monitors.

The Radeon HD 3870 supports PCI Express 2.0, but it also boasts several features that Nvidia can't match at any of its price points. One of the most interesting of these is an HDMI adapter that plugs into the card's DVI output. The GPU can send the 16-bit PCM stereo or 5.1-channel digital audio stream from a DVD, HD DVD, or Blu-ray disc right alongside the digital video from the same source.



HIS set the Radeon HD 3870's core to run at 777MHz and its 512MB of GDDR4 memory at 1.126GHz.

If your display is equipped with good-quality speakers and HDMI inputs (or if you're using an A/V receiver with HDMI inputs and outputs), this adapter can eliminate a few cables from your configuration. As innovative as this feature might be, we think few people will actually take advantage of it. Most of these cards will be used in gaming PCs—which generally include monitors with DVI inputs and speakers with analog-audio inputs. The 3870's support for Direct3D 10.1 and Shader Model 4.1 is equally esoteric in light of game developers' widespread reluctance to embrace even DirectX 10.0.

The benchmark charts reveal that the Radeon HD 3870 can't outrun Nvidia's G92-based GeForce 8800 GTS, but since it's $85 cheaper, it doesn't need to.

—MICHAEL BROWN

HIS RADEON HD 3870 **9**

$250, www.hisdigital.com

MAXIMUM PC KICKASS

Amazon Kindle

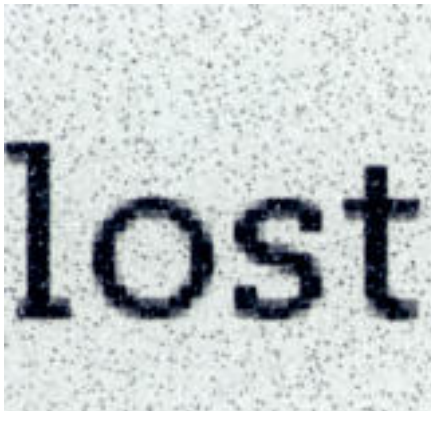
The electronic book, very nearly perfected

The Kindle's hardware kicks mucho ass, with a beautiful, easy-to-read screen and great battery life. We're not fans of the DRM-laden book format though.

We've long appreciated the concept of the eBook, but we've been disappointed in its execution. The old Franklin readers ate batteries, had small screens, and included only a meager selection of books. Sony's Reader has a better battery life, but the selection of first-run books leaves much to be desired. Amazon's new Kindle solves many of these problems but introduces an even thornier one.

Like the Sony Reader, the Kindle sports a 6-inch black-and-white E Ink screen. Unlike backlit LCD screens, E Ink draws power only when pixels are changing, which greatly improves battery life for this type of device. There are other benefits as well: The screen looks more paperlike and is easier on the eyes than a typical backlit LCD. Of course, there's a downside: The screen redraw time is very slow, you need an external source of light to see what's on the screen, and E Ink is limited to black and white, at least for now. The Kindle's 188MB of onboard memory should be sufficient to hold at least 100 average-size books and an integrated SD card slot allows for additional storage.

What separates the Kindle from other electronic books is its tight integration with Amazon. By building in an EVDO cellular data connection and connectivity to the



The Kindle's screen is made up of a ton of tiny magnetic balls, which are light on one side and dark on the other.

Kindle store, Amazon removed the requirement for a PC from the eBook equation. There's no monthly charge for the wireless service, and downloading books takes less than a minute. Furthermore, Amazon is selling electronic books at a steep discount over their dead-tree brethren. The most expensive (non-textbook) title we've seen on the service is $9.99, with many older books priced substantially lower. With only about 90,000 titles available currently, finding the book you're looking for can be hit or miss, but the selection is growing every day, and includes all the current bestsellers, plus a respectable back catalog. Unlike other eBooks, the Kindle could be a money-saving proposition for voracious readers who purchase lots of hardcover books.

Kindle also allows you to access newspapers, magazines, and blogs. For a small subscription fee (the *New York Times* costs $15/month, Boing Boing costs $2/month), your Kindle will automatically download the news of the day from your publication of choice. The newspaper selection includes major dailies from around the country, but the magazine selection lacks many publications we'd like to have. Because of the limitations of the black-and-white screen, only text-heavy magazines like *Newsweek* are available via Kindle. We wouldn't buy a Kindle just to read the *San Francisco Chronicle* and *Newsweek*, but it's a handy bonus.

Naturally, if you live outside an area serviced by Sprint/Nextel's data coverage, then you can use your PC to download and copy content to the Kindle, either over USB or by copying it to an SD card. You can also use the same mechanisms to back up your purchased Kindle content, although that isn't necessary. All of your digital purchases are automatically backed up online at Amazon's digital media locker. If you delete something from your Kindle and later want to reread it, you can easily redownload it from Amazon at no additional charge.

There are some problems with the Kindle. Using the wireless service absolutely destroys the battery life. With wireless disabled, the Kindle's battery lasts more than a week, but we could mow through a half-charge in the time it took to find and download a couple of new books. We also strongly dislike the Kindle's proprietary file format. In order to view a PDF on the device, you must email it to a special email address, which will convert the PDF to the Kindle format and automatically deliver it—for $0.10. And the larger problem is that Kindle books you buy from Amazon won't necessarily work with future eBook readers. By using a closed format, Amazon effectively locks you into its hardware platform, at least if you want to be able to revisit your old purchases. There isn't even a reader program for your PC. Be aware of this before you shell out $400 for a Kindle.

The Kindle is an extremely promising platform, but until Amazon commits to building a migration path for users to move their books from one eBook platform to another, we just can't give it a glowing recommendation.

—WILL SMITH

AMAZON KINDLE

NEIL GAIMAN
Cheap books. Great screen and impressive battery life, when not using wireless.

JACKIE COLLINS
Closed eBook format locks you into the Kindle forever. Expensive. Doesn't support PDF.

7

$400, www.amazon.com/kindle

Eye-Fi Wireless Flash Card

It's gimmicky but fun

Miniaturization has brought us amazing advances—tiny transistors, microscopic nanotubes, bite-size Frosted Mini Wheats, and now the Eye-Fi. Combining a 2GB flash card with a Wi-Fi radio, this affordable hybrid card lets you easily upload pictures directly from your camera to the web and your PC.

Setup is easy. You plug it into your PC and run the included software, pick from a list of photo-sharing sites (including SmugMug, Flickr, and Facebook), create an Eye-Fi account, and configure security (40-128 bit WEP, WPA-PSK, or WPA2-PSK). For our test, we uploaded images to SmugMug from our Canon EOS 1D-MkII N.

Like magic, images we shot popped up on our SmugMug page and the client PC. Of course, Wi-Fi capability in a digital camera isn't new—but it's never been this cheap, this tiny, or this universal. Because the Eye-Fi is a standard-size SD card, it should work in almost any camera.

So what's wrong with it? Speed. It took roughly 6 minutes to transfer a 5MB image over our corporate LAN, which has 14Mb uploads and 30Mb downloads. Bang out 35 photos, and you'll have to leave the camera on for the evening to upload your pics. Fortunately, the images are also stored on the card, so if you shut down, you can resume your upload later. What is wacky is that images are sent from the card to Eye-Fi's server, which then disperses them to your website or PC. The impact on battery life is difficult to gauge but is certainly a drag. The card also can't upload video or RAW files and doesn't work with access points without security or in peer-to-peer mode.

Despite all these warts, the Eye-Fi is still very cool. You could, for example, use it to post snaps of your hot New Year's party to the web as it's happening. The card's also handy for tuckered parents who don't have the energy to upload images of little Timmy to a web page for grandma to see. With the Eye-Fi, you bang out a couple of shots and set your camera down. There are clearly improvements to be made, but for $100, it's a fun toy to try own.

—GORDON MAH UNG

The convenience of automatic uploads offsets the Eye-Fi's sluggish performance.

EYE-FI FLASH CARD **8**

$100, www.eye.fi

Unreal Tournament 3

Let's get ready to gib!

Since the last Unreal Tournament game was released four years ago, no worthy contender has managed to dethrone the now-classic shooter as the best game for online deathmatches. With the much-delayed Unreal Tournament 3, we get the uneasy feeling that Epic Games has grown a bit complacent with its multiplayer crown. The game's brand-new graphics engine and glut of maps mask some very familiar weapons and gameplay mechanics. And while we appreciate that the developers haven't broken from a proven design formula, we're disappointed by the lack of innovation in this long-awaited sequel.

What truly stands out in this visceral fragfest are the gorgeous new maps and the arsenal of new vehicles. UT3 is packed with more than 40 maps split among its five modes (deathmatch, duel, CTF, vehicle CTF, and warfare), each oozing with a memorable style and design gimmick. For example, the Deimos map awed us with its zero-gravity tubes and mesmerizing space backdrop, while the Gateway map kept us on our toes by warping us to three distinct battlegrounds. Learning how to apply our acrobatic fragging skills to the new maps was an exciting challenge, which is why we also appreciate the bot-driven single-player campaign.

Sixteen new vehicles gave us fresh and faster ways to slaughter our foes. From the elevated Necris Darkwalker to the massive five-seat Leviathan battle tank, the mechanical transports here are daunting death dealers that can't be taken out alone. We especially liked using the flying Fury vehicle to zip across maps while our teammates latched on with grapples and flew behind us.

The only new gameplay mode included is warfare, which is a mix of the CTF and onslaught modes. By including a gameplay device called the orb (which allows players to instantly capture control-point nodes), this team-based mode ensures that rounds are fast paced but balanced enough to avoid lopsided victories. Still, it's no replacement for the omitted assault and bombing-run modes.

Like Samus Aran, the Necris Scavenger can morph into an orb and barrel through enemies.

We're not sure if the relatively sparse amount of new content in UT3 will be enough to convince the existing Unreal community to upgrade. Until more players make the transition, $50 is a steep price to pay for updated visuals at the cost of a vibrant community.

—NORMAN CHAN

UNREAL TOURNAMENT 3 **8**

$50, www.unrealtournament3.com, ESRB: M

Win R

Month

WIN BIG!

IF YOUR MODDED PC IS CHOSEN AS A RIG OF THE MONTH, IT WILL:

2 **Win you a $500 gift certificate for eWiz.com**

TO ENTER: Your submission packet must contain your name, street address, and daytime phone number; no fewer than three high-res JPEGs (minimum size 1024x768) of your modified PC; and a 300-word description of what your PC represents and how it was modified. Emailed submissions should be sent to **rig@maximumpc.com**. Snail mail submissions should be sent to Rig of the Month, c/o Maximum PC, 4000 Shoreline Court, Suite 400, South San Francisco, CA 94080.

The judges will be *Maximum PC* editors, and they will base their decision on the following criteria: creativity and craftsmanship.

ONE ENTRY PER HOUSEHOLD. Your contest entry will be valid until (1) six months after its submission or (2) February 1, 2008, whichever date is earlier. Each month a winner will be chosen from the existing pool of valid entries, and featured in the Rig of the Month department of the magazine. The final winner in this contest will be announced in the April 2008 issue. Each of the judging criteria (creativity and craftsmanship) will be weighed equally at 50 percent. By entering this contest you agree that Future US, Inc. may use your name and your mod's likeness for promotional purposes without further payment. All prizes will be awarded and no minimum number of entries is required. Prizes won by minors will be awarded to their parents or legal guardians. Future US, Inc. is not responsible for damages or expenses that the winners might incur as a result of the Contest or the receipt of a prize, and winners are responsible for income taxes based on the value of the prize received. A list of winners may also be obtained by sending a stamped, self-addressed envelope to Future US, Inc. c/o Maximum PC Rig of the Month, 4000 Shoreline Ct, Suite 400, South San Francisco, CA 94080. This contest is limited to residents of the United States. No purchase necessary; void in Arizona, Maryland, Vermont, Puerto Rico, and where prohibited by law.

We tackle tough reader questions on...

✓Vista's Versatility ✓Photo Sharing ✓Speaker Suggestions ✓Captions

VEHEMENT ABOUT VISTA

*I have been what I consider a pretty loyal reader (this being my fifth year of reading **Maximum PC**) and I've always been a huge fan of the magazine. I was, however, very unhappy with the January 2008 article "Make Vista Liveable." I have used Vista since it came out, and while I did see some problems with it at first, it was still liveable. Since then, Vista has become extremely stable and extremely fast. I absolutely love it and every time I have to use XP I get a bit frustrated because I've gotten used to things in Vista that are quite nice.*

You claim that Vista is "bloated, pokey, buggy" but fail to actually explain why or how. I mean, if you really hate all the effects and the GUI, then you can revert to the traditional Windows 9x/2000 theme. My point is that nearly everyone who doesn't use Vista has the impression that the OS is terrible because the media is saying so. Yet most people that actually use Vista love it. Stop "going with the flow" and get off the "Vista sucks" bandwagon. Vista is fine for home use, and if it truly isn't then please back up your hate. And I don't want to hear the excuse that "Vista lowers gaming performance." Yeah, it does. But you still get good FPS. Just because you go from 200 to 180 doesn't mean the OS sucks. Other features make up for it, and 180fps is more than playable.

—Rafael Lopez

EDITOR IN CHIEF WILL SMITH RESPONDS: You're right, we haven't actually spelled out what we don't like about Vista lately. Here it is, bulleted for your reading pleasure:

• Vista suffers from a basic 10-percent performance hit in games and many apps. Simply put, Vista is slower than XP at virtually everything we've tested.

• Windows Genuine Advantage is neither genuine nor an advantage. When it works, it's just mildly annoying. When it doesn't, your bought and paid-for copy of Windows is worthless. That's bad.

• UAC is the worst feature ever. In fact, it's so annoying that most users turn it off after mere moments.

• Even though 64-bit Vista is a great improvement over the x64 version of XP, it's still basically unusable. Your iPod won't sync, it's unstable with common hardware, and basic functionality like suspend and resume don't work.

• A year out, we still have no value-adds for people who purchased Ultimate for $400.

• A lack of 3D hardware audio APIs is bad for gaming.

By fractionalizing the features included with Vista, Microsoft has added to customer confusion. There needs to be only one version of Windows, and it should include all the functionality that's currently spread out over seven different SKUs. This differentiation might be a good business choice, but it's bad for the end-user experience.

The sad thing is that Vista does a few things well; despite the failures of UAC, Vista is a more secure OS than XP. The redesigned Start and Nav menus are good enhancements, but the overall Vista experience isn't significantly better than what XP offers. The things Vista

Speaker Recount

It's great that you provide us with a Best of the Best list (In the Lab), but I'm wondering why the GigaWorks S750 is listed under the 5.1 speaker category (February issue). This system is very rare, expensive, and a 7.1 (seven piece) setup.

On Amazon.com, it says the Creative Labs GigaWorks S750 7 Piece THX 7.1 Speaker System is "currently unavailable" and "We don't know when or if this item will be back in stock."

—Sergey Samarin

EXECUTIVE EDITOR MICHAEL BROWN RESPONDS: Yeah, we goofed by listing the GigaWorks THX S750 under the heading 5.1 Speakers—it is indeed a 7.1-channel system. The difference, of course, is that the system includes two side speakers in addition to the front, center, and rear channels. The main reason we added the S750 to the list was that we had selected the system for our 2007 Dream Machine (September).

Few things irritate us more than crappy speakers, so the fact that the GigaWorks S750 is selling for $500 doesn't bother us. The system's performance warrants the price. The fact that Creative's system is becoming difficult to find, on the other hand, means we need to seek out a new Best of the Best pick in this category. In the meantime, you might consider Creative's GigaWorks ProGamer G500 ($250), which received a 9 verdict in February 2005, or Logitech's Z-5500 Digital ($400), which received a 10/Kick Ass way back in November 2004.

does well simply don't outweigh the things it does poorly. On the plus side, DreamScene is awesome—for, like, the first four days.

TAXES? YOU PAY TAXES?

In your February "Online Photo Sharing" Head2Head, you say Picasa "will automatically grab every image on your machine." Presumably it takes all JPEGs and BMPs larger than a certain size and skips those known to not be user images—for instance, files in the web cache. A user who thinks he is agreeing to share his photos may find he has shared private data as well, if that data happens to be in a JPEG.

I imagine that many users may have scanned a tax return or some other sensitive document. The idea that in the age of Internet security risks (and in the same issue where your cover is devoted to the topic) you would discuss such a program and not point out the risks is disturbing. There should always be human control of what is or is not posted online.

—Peter Dempsey

MANAGING EDITOR TOM EDWARDS RESPONDS: We agree wholeheartedly that people should take care when uploading images to the web. Luckily, while Picasa will scan your hard drive for most types of images, it will not automatically upload those files to your online photo album without your permission. If you're not diligent about keeping your photos organized, letting Picasa scan your machine is a good way to see everything in one place. From there, you can choose which images to share with the world and which ones to keep away from curious eyes.

MORE PDFS!

I've been subscribing for about eight years now, so could you pretty, pretty, pretty please make more PDFs available from before December 2005 (currently the oldest)? I can't bear to throw any of my old issues away, but I'd like the shelf space back. My girlfriend threw away a bunch of old ***Entertainment Weekly*** *issues and doesn't understand why I can't do the same.*

—Lee Overstreet

EDITOR IN CHIEF WILL SMITH RESPONDS: Glad you like the PDF archive on MaximumPC.com. We're really excited to be able to offer back issues of the magazine in this format for free. We'll be adding more back content to the website as time allows. It's very nearly a full-time job just keeping the current content up to date, so expect older content to trickle out over time. Eventually, we plan to have every issue from the time we started sending pages to the printer in PDF format (that happened in early 2000) posted online. Unfortunately, for issues before the PDF transition, it's unlikely we'll make PDF archives; it would simply be too time-consuming to build machines that have the necessary fonts and applications to properly render the pages from so long ago.

CAPTION CLARIFICATION

I just received my January 2008 issue in the mail and was disturbed by something in the "Overclock Your PC" story. On page 24, there's a picture of a PC Power & Cooling Turbo-Cool unit with a caption reading: "You don't need a 1,200-watt PSU like this PC Power & Cooling Turbo-Cool, but you do need a quality, name-brand unit."

Is this a comment against PC Power & Cooling (OCZ) or that particular power supply, or do you mean you won't ever need a 1200-watt power supply? Why would you phrase the caption in that manner? I just don't understand. I do use PC Power & Cooling and have for several years due to their excellent customer service and product reliability.

— Kevin Dent

DEPUTY EDITOR KATHERINE STEVENSON RESPONDS: We in no way meant to imply that PC Power & Cooling's Turbo-Cool unit is not a quality, name-brand unit—although I can see why the phrasing of the caption could suggest that. As a matter of fact, we're big fans of PC Power & Cooling PSUs and use them in our Lab test beds. Our point was that you don't need anything so burly as a 1200-watt PSU in order to overclock. Sorry for the ambiguity. MPC

LETTERS POLICY: ***MAXIMUM PC*** invites your thoughts and comments. Send them to **input@maximumpc.com.** Please include your full name, town, and telephone number, and limit your letter to 300 words. Letters may be edited for space and clarity. Due to the vast amount of e-mail we receive, we cannot personally respond to each letter.

COMING NEXT MONTH

IN MAXIMUMPC'S SANDALWOOD AND SEA SALT APRIL ISSUE

- **BUILD A GAMING PC**
  Forget about those fancy-pants store-bought rigs. You can build a kick-ass gaming machine for less than $2,000. We'll show you how!
- **GEEK QUIZ**
  Will this be the year that you ace the granddaddy of all tech tests? Better bone up!
- **MULTIMEDIA SUITES**
  We'll dissect the latest versions of Nero and Easy Media Creator. When it's all over, you'll know which do-everything package is right for you.

Sponsored by eWiz

CHRIS COO

Phas

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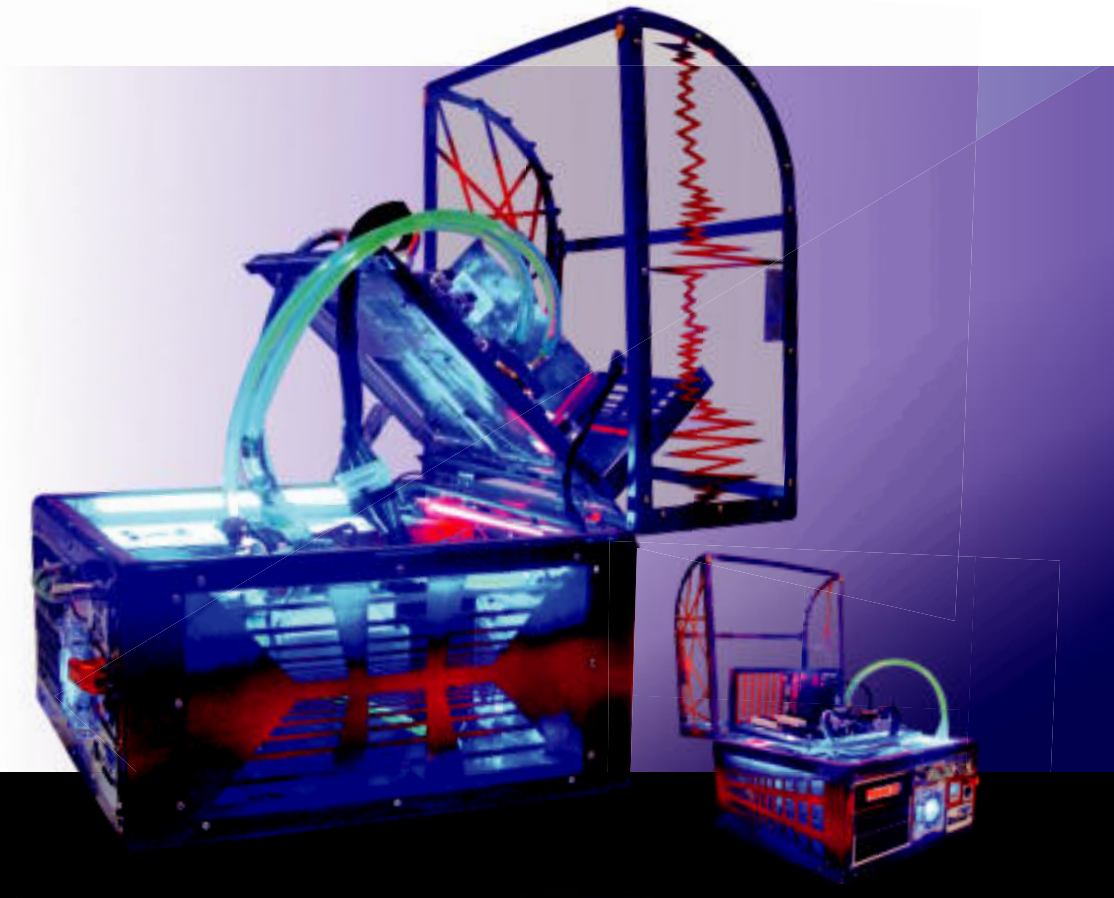
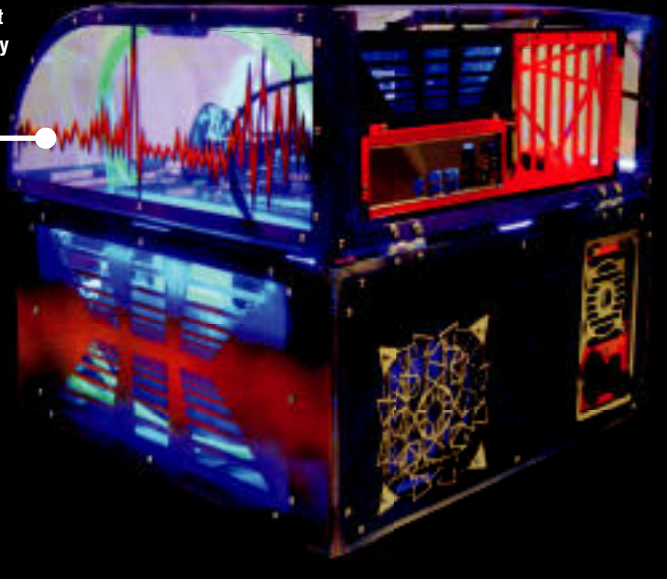


The front panel
reservoir and f
and temperature monitor LCD that
the temps of both the coolant and the area directly below the motherboard.

single piece of Plexiglas that was bent using heat and pressure, makes it easy to view the motherboard layer of the rig while the system is in action.



For his winning entry, Chris wins a $500 gift certificate for eWiz.com to fund his modding madness! See all the hardware deals at www.ewiz.com, and turn to page 92 for contest rules.

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